

EXHIBIT H

EXHIBIT H-1

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|-------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------|
| Vegetation Management | |  Pacific Gas and Electric Company |
| Description of Handheld Codes | Created | 11/9/00 |
| Version 2 | Revised | 3/29/02 |
| Version 3 | Revised | 8/27/04 |
| Version 4 | Revised | 7/16/15 |
| Document Owner: VM Planning | Contact: [REDACTED] | Phone: [REDACTED] |

Description of Handheld Codes

Following is a list of handheld codes that are used to describe the type of work for each entry made in the handheld. The entry for the reason code can be found under Account Type on the first screen of the hand held. The reason code defines why, or why not, the tree needs work and identifies its root cause.

| Hand held code | Full Text | Definition | Account number |
|----------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| No Work | No Work | There is no work that needs to be done. When using this reason, be sure to use tree code NONE on screen 3, and state why in the reason code. Do not use the comment field unless needed. | EC/LC Notification or CC&B Case number |
| Non Essential | Non Essential | Identifies a tree issue that needs work that can be integrated in the routine trimming circuit schedule. | EC/LC Notification or CC&B Case number |
| Poor Clear | Poor Clearance | By looking at the old cuts and Project Management schedule, it is the opinion of the inspector that the crews/PI did not obtain the proper clearance last time the tree was trimmed. | EC/LC Notification or CC&B Case number |
| Missed Tree | Missed tree | The circuit was in the previous two project quarters and should have been in compliance. Missed by Tree Trimmers or Pre-Inspection. | EC/LC Notification or CC&B Case number |
| Cycle Bust | Cycle Buster | Fast growing tree that should be set to Bi-Annual next trim and was not in the previous two quarters. Pursue removal on these trees | EC/LC Notification or CC&B Case number |
| QA location | Quality Assurance Location | There is work needed to clear up a concern found by the Quality Assurance Group. | Review number Ex: 3-DL1-15 |
| Storm | Storm | Working on storm damage, tree failures, etc. | EC/LC Notification or CC&B Case number |
| Refusal | Refusal | Tree has not been trimmed because of refusal status. | EC/LC Notification or CC&B Case number |
| Capital | Capital | Used when doing NON VM work. Be sure to obtain a Standing Order Number 7 numbers long with no letters in it. Or a PM number, which is 10 numbers long. | SO/Billing number or PM number |
| Unforeseen | Unforeseen situation | There was some fundamental change since the last patrol. Ex: soil wash out, snow load, sudden oak death, etc. | EC/LC Notification or CC&B Case number |
| Project | Project | Specific project directed by the VPM | Project Number |

EXHIBIT H-2

High Fire-Threat District Bulletin

SUMMARY

California Public Utilities Commission (CPUC) decision R.15-05-006 adopted regulations to enhance fire safety in designated High Fire-Threat Districts (HFTD) across California. The regulations include new clearance requirements that modify General Order (GO) 95, Rule 35 and affect PG&E's TD-7102S, "Distribution Vegetation Management Standard (DVMS)."

This bulletin is intended to clarify the new requirements and supersede the vegetation clearance minimum distances specified in Appendix A of the TD-7102P-01, "Distribution Routine Patrol Procedure (DRPP)."

Level of Use: Informational Use

AFFECTED DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

[TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

TARGET AUDIENCE

PG&E vegetation management (VM) employees and VM contractors

WHAT YOU NEED TO KNOW

- A minimum of 48 inches of clearance between vegetation to distribution voltage conductor clearance is required at all times within the HFTD.
- In some areas, the HFTD overlaps Local Responsibility Area (LRA) in which 18 inches of minimum clearance was the previous requirement.
- When the HFTD and LRA designations overlap, it is operationally referred to as the Increased Clearance Area (ICA).

1 Primary Lines

1.1 Pre-inspector (PI) IDENTIFIES the ICA boundary using the Vegetation Mapping for Pre-Inspection (VMPI) application AND PRESCRIBES tree work based on new clearance requirements shown in Appendix A of the [TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#).

1.2 IF a tree requires work,

THEN, PI must RECORD tree latitude and longitude coordinates using the VMPI application to designate whether or not the tree is located within the ICA.



High Fire-Threat District Bulletin

NOTE

The ICA tree record alert is used to indicate tree work that is necessary due to new clearance requirements in LRA. It will allow tracking additional trees that would not have been listed based on previous LRA clearance requirements.

1.3 IF a tree requires work due to new clearance requirements in the ICA,
THEN, PI must ADD the **Increased Clearance Area** alert to the tree record.

APPENDIX A: MINIMUM DISTANCE REQUIREMENTS

| CPUC Rule 35, Table 1, Case 13 | CPUC Rule 35, Table 1, Case 14 | PRC 4293 | Potential Line Sag (2) (feet) |
|------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------|
| Applicable at all times (1) (feet) | Applicable in the High Fire Threat District at all times (1) (feet) | Applicable in SRA during fire season (1) (feet) | |
| 1.5' | 4' | 4' | 1 - 4' |

1. Vegetation must **not** encroach within the minimum distance at any time between inspection and one year or the next scheduled tree work cycle.
2. Depending on span length, facility construction, and conductor material, potential sag and sway can range from 1' at quarter-span to 4' at mid-span.

DOCUMENT APPROVER

[REDACTED], Sr. Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager, Vegetation Management



High Fire-Threat District Bulletin

INCLUSION PLAN

This bulletin will be incorporated into TD-7102S, Distribution Vegetation Management Standard (DVMS), and TD-7102P-01, Distribution Routine Patrol Standard (DRPP) upon its next revision within a year of the publish date of this bulletin.

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

[TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

EXHIBIT H-3



Working Trees Near High Voltage Electric Lines Using Cranes

SUMMARY

This bulletin establishes contractor requirements for safely removing trees using cranes, hoists, derricks and other equipment near high voltage circuits, energized in excess of 600 volts.

Level of Use: Informational Use

AFFECTED DOCUMENT

None

TARGET AUDIENCE

PG&E vegetation management (VM) contractors utilizing cranes to work trees near energized facilities

WHAT YOU NEED TO KNOW

This document is being issued due to the increased need for using cranes to safely work trees to protect the PG&E electric facilities, crane operators, and tree workers. This bulletin states requirements for:

- Crane operations in the vicinity of energized electric lines. See Appendix A, Minimum Approach Distances.
- Using cranes for hoisting trees or portions of trees (boles, limbs, etc.) over lines.
- Qualified line clearance tree workers and qualified crane operators working near energized facilities in excess of 600 volts.
- When a qualified electrical worker (QEW) is required for work near energized facilities with cranes.

1 Working Trees within 10 Feet of Energized Conductors

1.1 Personnel Requirements

1. Tree work within 10 feet of electric lines must be performed by qualified line clearance tree workers.
2. Tree crew personnel working in the proximity of electrical conductors must follow the guidelines of ANSI Z133-2012 (section 4.2) and maintain Minimum Approach Distances (MAD) for qualified line clearance tree workers. See Appendix A, Minimum Approach Distances.
3. If anyone at any time feels unsafe on the job site, that person must SPEAK UP and STOP WORK.

Working Trees Near High Voltage Electric Lines Using Cranes

1.2 Cal/OSHA Requirements

1. Utility line clearance tree work is considered maintenance of PG&E overhead lines.
2. Cal/OSHA Regulations (Title 8 California Code of Regulations (CCR) section 2949) grants PG&E an exemption to sections 2946, 2947, and 2948 of the regulations, as owners of electric facilities. This exemption allows PG&E line clearance qualified workers (employees and contractors) to perform maintenance work utilizing a crane near high voltage lines.
3. Pursuant to Cal/OSHA title 8, section 2949:
 - a. PG&E uses qualified line clearance tree workers and qualified crane operators to perform the work, and they are exempt when following this procedure and the conditions spelled out in section 2949.
 - b. This exemption applies only to the contractors specifically hired by PG&E to work near PG&E facilities, and is only valid for those contractors while working for PG&E on PG&E projects. The exemption is **not** transferrable to other non-PG&E projects that they perform.

2 Using a Crane to Work Trees within 10 feet of Energized Conductors

- 2.1 The crane operator must be trained and qualified per Cal/OSHA requirements for crane operations, and must follow the guidelines of ANSI Z133-2012 for crane operation, section 5.7.
- 2.2 IF any part of the qualified line clearance tree worker, tree, crane, or load will encroach with 10 feet of the high voltage or within the MAD of low voltage lines,
 THEN PG&E must make arrangements to guard against the danger from accidental contact with high-voltage lines.
 - a. QEW ACHIEVES this by installing approved insulating devices on the energized conductors, or by de-energizing and grounding the electric lines.

3 Using a Crane to Work Trees beyond 10 feet of Energized Facilities

- 3.1 The operation of cranes beyond 10 feet and outside of MAD for low voltage conductors, or over energized overhead high-voltage lines, is permitted if the contractors and PG&E employees are following this procedure, all Cal/OSHA requirements, and utilizing qualified persons and approved equipment. See Appendix B, Minimum Clearance Distances.



Working Trees Near High Voltage Electric Lines Using Cranes

DEFINITIONS

Qualified Line Clearance Worker: Tree worker who has received specialized training to work within 10 feet of energized power lines and equipment. This person is also referred to as a Qualified Line Clearance Arborist in ANZI Z133-2012.

Qualified Person: By regulatory definition, a person designated by the employer who, by reason of experience and training, has demonstrated the ability to safely perform assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.

Qualified Electrical Worker (QEW): By regulatory definition, a qualified person who has a minimum of two years of training and experience with high-voltage circuits and equipment, and has demonstrated by performance, familiarity with the work to be performed and the hazards involved.

DOCUMENT APPROVER

[REDACTED], Manager, VM CEMA

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager, VM CEMA – South

INCLUSION PLAN

This document will be incorporated into the [TD-7102P-01 Distribution Routine Patrol Procedure \(DRPP\)](#) upon its next review requiring revision; November 2017.

Working Trees Near High Voltage Electric Lines Using Cranes

Appendix A, Minimum Approach Distances

Page 1 of 1

Table 1. Minimum approach distances from energized conductors for qualified line-clearance arborists and qualified line-clearance arborist trainees.

| Nominal voltage in kilovolts (kV) phase-to-phase | Includes 1910.269 elevation factor, sea level to 5,000 ft (1524 m)* | | Includes 1910.269 elevation factor, 5,000–10,000 ft (1524–3048 m)* | | Includes 1910.269 elevation factor, 10,001–14,000 (3048–4267 m)* | |
|--------------------------------------------------------|---------------------------------------------------------------------------|------|--------------------------------------------------------------------------|------|------------------------------------------------------------------------|-------|
| | ft-in | m | ft-in | m | ft-in | m |
| 0.051 to 0.3 | <i>Avoid contact</i> | | <i>Avoid contact</i> | | <i>Avoid contact</i> | |
| 0.301 to 0.75 | 1-01 | 0.33 | 1-03 | 0.38 | 1-04 | 0.41 |
| 0.751 to 15.0 | 2-05 | 0.70 | 2-09 | 0.81 | 3-00 | 0.88 |
| 15.1 to 36.0 | 3-00 | 0.91 | 3-05 | 1.04 | 3-09 | 1.00 |
| 36.1 to 46.0 | 3-04 | 1.01 | 3-10 | 1.16 | 4-02 | 1.09 |
| 46.1 to 72.5 | 4-02 | 1.26 | 4-09 | 1.44 | 5-02 | 1.30 |
| 72.6 to 121.0 | 4-06 | 1.36 | 5-02 | 1.55 | 5-07 | 1.68 |
| 138.0 to 145.0 | 5-02 | 1.58 | 5-11 | 1.80 | 6-05 | 1.96 |
| 161.0 to 169.0 | 6-00 | 1.80 | 6-10 | 2.06 | 7-05 | 2.23 |
| 230.0 to 242.0 | 7-11 | 2.39 | 9-00 | 2.73 | 9-09 | 2.95 |
| 345.0 to 362.0 | 13-02 | 3.99 | 15-00 | 4.56 | 16-03 | 4.94 |
| 500.0 to 550.0 | 19-00 | 5.78 | 21-09 | 6.60 | 23-07 | 7.16 |
| 765.0 to 800.0 | 27-04 | 8.31 | 31-03 | 9.50 | 33-10 | 10.29 |

*Exceeds phase-to-ground; elevation factor per 29 CFR 1910.269.

Working Trees Near High Voltage Electric Lines Using Cranes

Appendix B, Minimum Clearance Distances

Page 1 of 1

| Voltage (nominal, kV, alternating current) | Minimum Clearance Distance (feet) |
|-------------------------------------------------------|----------------------------------------------|
| Up to 50kV | 10 |
| Over 50 to 175 kV | 15 |
| Over 175 to 350 kV | 20 |
| Over 350 to 550 kV | 27 |
| Over 550 to 1,000 kV | 45 |

EXHIBIT H-4



Second Patrol - Scope of Work Requirements

SUMMARY

This bulletin provides an overview of the work performed by Second Patrol.

This bulletin is intended for use only on those projects identified and assigned by the PG&E representative as Second Patrol Projects to address only dead, dying, and declining trees, or dead portions of trees, including dead overhangs, that have the ability to contact PG&E facilities in the event that they fail.

Second Patrols are often identified with the label Catastrophic Event Memorandum Account (CEMA) as this is how Second Patrol Projects are distinguished in the vegetation management (VM) Back Office software system and in all Vegetation Management Database (VMD) and Project Management Database (PMD) records and reports. The term "Second Patrol" is preferred and is used in this document.

Level of Use: Informational Use

AFFECTED DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

TARGET AUDIENCE

VM governance and support personnel
VM operations personnel – North and South
VM Second Patrols – VM Second Patrol contractors

WHAT YOU NEED TO KNOW

1 Second Patrol Projects

- 1.1 Second Patrol projects address only dead, dying, and declining trees, or dead portions of trees, including dead overhangs, that have the ability to contact PG&E facilities in the event that they fail. Trees identified in need of compliance work other than listed above are reported to and dealt with by routine operations.
- 1.2 Second Patrol contractors report compliance issues not listed in step 1.1, above, to routine operations, and routine operations completes the listing process and manages work completion.

2 Types of Second Patrols

2.1 Ground Patrols

1. For projects identified as CEMA GROUND in PMD, PI inspects only portions of circuits that are in State Response Areas (SRA).

Second Patrol - Scope of Work Requirements

2.1 (continued)

2. PI inspects all lines at an interval of once per year, approximately 6 months from when routine patrol inspects these circuits.
- 2.2 Wildland Urban Interface (WUI) patrols occur in the area where structures and other human development meet or intermingle with underdeveloped wildland.
 1. For projects identified as CEMA WUI in PMD, PI inspects only portions of the circuit that are in Local Response Areas (LRA) and within two GIS layers, WUI and Fire Hazard Severity Zone (FHSZ).
 - a. All lines within the WUI layer are inspected 6 months (or 2 quarters) opposite of when routine inspects these circuits.
 - b. All lines within the FHSZ layer are inspected three (3) times per year, in each quarter that routine is not inspecting these circuits. This Second Patrol project pertains only to the "Very High" fire severity zone within LRA.

2.3 Aerial Patrols

1. For projects identified as CEMA Aerial in PMD, PI inspects the circuit, or portions of, from a helicopter. Any portion of the circuit that cannot be flown or clearly seen from the air requires PI to perform a ground patrol of those line portions. For locations identified from the air with potential tree issues, PI will verify the trees are meeting scope by performing ground patrol of the location.

3 CEMA Program

3.1 Program Description – CEMA

1. As described in [TD-7102P-23, "Vegetation Management Second Patrol – Practices,"](#) the CEMA Program is the PG&E system-wide program of patrolling, identifying, prescribing, conducting, and documenting work for trees that are dead or dying to maintain compliance with all applicable laws and regulations.
 - a. Patrols are performed by PI contractors, and the prescribed work is completed by the tree contractors (TC). When trees are present along the distribution line, a ground patrol is required to inspect the trees. However, aerial patrols by helicopter or LiDAR may also be used.
 - b. During the patrol, the PI identifies and prescribes work for trees that are dead or dying that could fail and make contact with conductors.
 - c. Trees identified for work are issued on a Work Request to TC. Work completion is monitored by VM CEMA staff with additional validation through quality control (QC).

Second Patrol - Scope of Work Requirements

3.2 Planning and Scheduling

1. Second Patrol - Detailed planning for VM CEMA projects is conducted in the third and fourth quarter of each year for the following year. The detailed planning process includes forecasting the number of Second Patrol units to work on State Response Areas (SRA) portions of each circuit that is patrolled by the Routine Vegetation Management (VM) program. The schedule for these projects is approximately 6 months (2 quarters) opposite of the Routine Vegetation Management schedule for the same projects.
2. Detailed planning for portions of circuits in the Wildland Urban Interface (WUI) and Fire Hazard Severity Zone (FHSZ) within the Local Response Areas (LRA) is conducted in the third and fourth quarter of each year for the following year. The schedule for the WUI projects is approximately 6 months (2 quarters) opposite of the Routine Vegetation Management schedule for the same projects. The FHSZ projects will be inspected three (3) times per year, in each quarter that routine is not inspecting these circuits. This Second Patrol project pertains only to the "Very High" fire severity zone within LRA.
3. Workload is forecasted using historical data on units worked in prior years and knowledge of current forest conditions and local site conditions. After the current-year forecast is developed, the schedule for the year is determined, taking into consideration the following factors:
 - Last routine patrol date
 - Accessibility (snow, flooding)
 - Agency projects (USFS, BLM, Coastal Commission, GGNRA)
4. Once the plan is finalized, all distribution line sections and their associated forecasts are entered into PMD.
5. PMD is used throughout the year to monitor work progress and work completion status.

3.3 Work Practice and Procedure

1. Pre-inspection and tree work is performed in accordance with PI Contract Specifications, TC Contract Specifications and the [TD-7102P-01, "Distribution Routine Patrol Procedure."](#)
2. Pre-Inspection
 - a. As described in [TD-7102P-23, "Vegetation Management Second Patrol – Practices."](#) PI inspects all vegetation, both inside and outside of the ROW, for trees that are dead or dying and have the potential to fail into the distribution conductors.

Second Patrol - Scope of Work Requirements

3.3. 2. (continued)

- b. Trees identified by PI as requiring work are entered into a handheld device. Upon completion of the field inspection, the handheld data is downloaded to the Vegetation Management Database (VMD).

3.4 Work Completion – Tree Pruning and Removal

1. Work identified by PI is issued to TCs as Work Requests generated through VMD.
2. A Work Request identifies the work practice and work methodology most appropriate to the work location. Second Patrol tree mitigation work assigned solely by Work Request is performed as selective manual removal of individual trees in and along the ROW.
3. When the assigned tree work is complete, the Work Request is closed out in VMD, and the PMD project for that Second Patrol project is updated as completed.

3.5 Refusals

1. PG&E will follow the [TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#) for all locations and incidents that result when work is constrained by external factors such as:
 - Customer refuses to allow VM access to property or hinders the ability to perform the work necessary to maintain compliance on distribution lines and facilities.
2. PG&E will follow [TD-7102P-23, Attachment 1, "Customer Notification Process"](#) for all locations where the PI is unable to make contact after several documented attempts.

3.6 Work Completion Status

1. VM PMD is a software application used for monitoring work status, adjustments to workload forecast, resources, and/or adjustments to the work schedule.
2. At the end of the planning process, information on Second Patrol projects is entered to PMD with a unit forecast and a planned start / completion date.
3. The work completion progress on each "Open" Second Patrol project is updated weekly and forecasted completion dates are adjusted as needed. When a line is reported as work complete by PI or TC, the date is entered in PMD as actual completion.
4. PMD has scheduling status reports that allow a program manager to monitor work completion and make resource adjustments.
5. PMD forecast and actual completion dates are used to document modifications to the annual work plan.



Second Patrol - Scope of Work Requirements

3.7 Quality Control

1. Monitoring PI and TC work performance is conducted by a separate QC contractor.

DOCUMENT APPROVER

[REDACTED], Manager, VM CEMA – Electric Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager – VM CEMA South

[REDACTED], Vegetation Program Manager – VM CEMA North

INCLUSION PLAN

The information in this bulletin will be incorporated into [TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)."](#)

EXHIBIT H-5-1



VM CEMA Tier 3 Patrol Practices

SUMMARY

This bulletin provides guidance to pre-inspectors (PI) who are performing Tier 3 patrols. A draft map of Tier 3 areas can be found on the CPUC Fire Map at:

http://cpuc_firemap2.sig-gis.com/

This bulletin is intended for use only on those projects identified and assigned by the PG&E representative as Tier 3 patrol projects. Vegetation Management (VM) Catastrophic Event Memorandum Account (CEMA) PI contractors will programmatically conduct additional inspections in designated high fire danger Tier 3 areas.

This bulletin is a temporary document, to be used until the end of Tier 3 patrols in 2017.

Level of Use: Informational Use

AFFECTED DOCUMENT

None.

TARGET AUDIENCE

Vegetation management operations personnel and contractors

WHAT YOU NEED TO KNOW

1 Tier 3 Patrol

The Tier 3 patrol process follows the VM Hazard Notification and Abnormal Field Condition processes, and addresses any vegetation that poses an imminent threat to PG&E overhead electrical facilities.

2 Tier 3 Patrols by PI Contractors

2.1 Tier 3 patrol PI INSPECTS the designated Tier 3 areas.

1. DETERMINE the VM circuit name and patrol areas identified within Tier 3 areas.
2. For projects identified as CEMA Tier 3 in the Project Management Database (PMD), INSPECT only the Source Side Devices (SSD) listed in the division folders in the VM Shared drive at:

<\\RcShare-NA505\2nd Patrol 2017\2017 Tier 3>

VM CEMA Tier 3 Patrol Practices

2.2 WHEN Tier 3 patrols are conducted on a circuit,
 THEN DOCUMENT where PI has inspected by creating a circuit map labeled "Tier 3 Patrols."

1. HIGHLIGHT, SIGN, AND DATE the portions of line inspected on the circuit map during the Tier 3 patrol.
2. RETAIN highlighted and signed patrol maps in the circuit folder, as per Step 1.2 of [TD-7102P-06, "Vegetation Management Mapping Procedure."](#)

2.3 IF a hazard notification (HN) condition is identified in the field,
 THEN

1. CREATE a tag for the correct account type based on the tree condition.
 - a. For HN green grow in and green failing trees, CREATE a tag under routine account type to be generated to routine maintenance account. Use Source Side Route Number 303030.
 - b. For HN trees identified that are dead or dying, CREATE a tag under the CEMA account type with the Tier 3 project number for the circuit being inspected. Use Source Side Route Number 303030.
2. FOLLOW the procedural steps in [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure."](#)
3. NOTIFY CEMA database management specialist (DMS) to generate tags for any dead or dying tree HN conditions found. COPY the CEMA contract forester (CF) and CEMA vegetation program manager (VPM) in the email request for work generation.
4. NOTIFY routine DMS to generate tags for any green tree HN conditions. COPY the CEMA DMS, CEMA CF, and CEMA VPM in the email request for work generation.

2.4 IF abnormal field conditions are found,
 THEN

1. FOLLOW the instructions in [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)
2. TAKE a picture of the abnormal condition AND EMAIL it to the CEMA DMS.

2.5 IF routine compliance work is found,
 THEN FOLLOW Section 9, "PI Identifies Routine Compliance Work During Second Patrol," in [TD-7102P-23, "Vegetation Management Second Patrol – Practices."](#)



VM CEMA Tier 3 Patrol Practices

DOCUMENT APPROVER

[REDACTED], Manager, VM CEMA – Electric Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager, VM CEMA

INCLUSION PLAN

This bulletin is a temporary document, to be used until the end of Tier 3 patrols in 2017.

EXHIBIT H-5-2

VM CEMA Tier 3 Patrol Practices

SUMMARY

This bulletin provides guidance to pre-inspectors (PIs) who are performing Tier 3 patrols and is intended for use only on those projects identified and assigned by the PG&E representative as Tier 3 patrol projects. Vegetation Management (VM) Catastrophic Event Memorandum Account (CEMA) PI contractors will programmatically conduct additional inspections in the designated High Fire Threat District (HFTD) Tier 3 areas.

Tier 3 Circuit Maps are located in the VM Shared drive at:

\\RcShare-NAS05\VMShared\Mapping\EDGIS Maps\Plots_2Q2018

This bulletin is a temporary document, to be used until the end of Tier 3 patrols.

Level of Use: Informational Use

AFFECTED DOCUMENT

None.

TARGET AUDIENCE

Vegetation management operations personnel and contractors

WHAT YOU NEED TO KNOW

1 Tier 3 Patrol

The Tier 3 patrol process follows TD-7102P-09, “Reporting Abnormal Field Conditions Procedure”, TD-7102P-07, “Vegetation Management Hazard Tree Rating and Scoring Procedure” and sections of TD-7103P-09, “T&D Vegetation Management Hazard Notification Procedure” to address potential threats to PG&E overhead electrical facilities.

2 Tier 3 Patrols by PI Contractors

2.1 Tier 3 patrol PI INSPECTS the designated Tier 3 areas.

1. For projects identified as CEMA Tier 3 in the Project Management Database (PMD), INSPECT only the distribution lines identified within the designated Tier 3 areas as seen on the Tier 3 Circuit Maps located in the VM Shared drive at:

\\RcShare-NAS05\VMShared\Mapping\EDGIS Maps\Plots_2Q2018

2.2 WHEN Tier 3 patrols are conducted on a circuit,

THEN DOCUMENT where PI has inspected by creating an Index map labeled “Tier 3 Patrols.”

1. HIGHLIGHT, SIGN, AND DATE the portions of line inspected on the index map during the Tier 3 patrol.

VM CEMA Tier 3 Patrol Practices

(Section 2.2 continued)

2. RETAIN highlighted and signed patrol maps in the circuit folder, as per Step 1.2 of [TD-7102P-06, "Inspection Mapping Procedure"](#)

2.3 IF abnormal field conditions are observed in the field,

THEN

1. FOLLOW the instructions in [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)
2. TAKE a picture AND provide the circuit name, GPS coordinates and details of the abnormal field condition, then SEND in an email to the CEMA DMS.

NOTE:

To assess hazard trees for potential to impact the PG&E overhead primary conductors, use [TD-7102P-07, "Vegetation Management Hazard Tree Rating and Scoring Procedure"](#) and [form](#).

For help identifying riparian areas, use the [Identifying Riparian Areas Job Aid](#). For trees identified within a riparian area, follow [TD-7102P-16, "Vegetation Management Riparian Review Procedure."](#)

For guidance on work activities near bird nests, follow [TD-7102P-27, "Vegetation Management Bird Nest Procedure."](#)

2.4 IF a hazard notification (HN) condition is identified in the field,

THEN

1. CREATE a tag, in a handheld device, for the correct account type based on the tree condition.
 - a. IF a green tree is observed in contact, or shows signs of contact with an un-insulated primary conductor (this does not include detached limbs hanging from the conductor) or is actively falling into the power lines as a result of tree failure,

THEN

CREATE an HN-immediate tag under routine account type to be generated to the routine maintenance account. Use Source Side Route Number 303030.



VM CEMA Tier 3 Patrol Practices

(Section 2.4 continued)

- b. IF a dead/dying tree is observed in contact or shows signs of contact with an un-insulated primary conductor (this does not include detached limbs hanging from the conductor) or is actively falling into the power lines as a result of tree failure,

THEN

CREATE an HN-immediate tag under the CEMA account type with the Tier 3 project number for the circuit being inspected. Use Source Side Route Number 303030.

- c. IF a green tree is observed in close proximity with an un-insulated primary conductor or with potential to come in contact with un-insulated primary conductors due to line sag or wind sway,

THEN

CREATE an HN-urgent tag under routine account type to be generated to the routine maintenance account. Use Source Side Route Number 303030.

- d. IF a dead/dying tree is observed in close proximity with an un-insulated primary conductor or with potential to come in contact with un-insulated primary conductors due to line sag or wind sway,

THEN

CREATE an HN-urgent tag under the CEMA account type with the Tier 3 project number for the circuit being inspected. Use Source Side Route Number 303030

1. Follow the procedural steps for notification of HN tags in section 1.2, sub steps 1 and 2 of the [TD-7103P-09, "T&D Vegetation Management Hazard Notification Procedure"](#)
2. NOTIFY CEMA database management specialist (DMS) to generate tags for any dead or dying tree conditions found. COPY the CEMA contract forester (CF) and CEMA vegetation program manager (VPM) in the email request for work generation.
3. NOTIFY routine DMS to generate tags for any green tree conditions. Copy the CEMA DMS, CEMA CF, and CEMA VPM in the email request for work generation.



VM CEMA Tier 3 Patrol Practices

2.5 IF routine compliance work is observed (i.e., a green tree observed within the Minimum Distance Requirement (MDR) displayed at the bottom of this page, or with potential to encroach the MDR of un-insulated primary conductors before the next patrol cycle),

THEN

1. CREATE an accelerated tag, on a handheld device, under routine account type to be generated to the routine maintenance account. Use Source Side Route Number 303030.
2. NOTIFY routine DMS to generate tags. Copy the CEMA DMS, CEMA CF, and CEMA VPM in the email request for work generation.

2.6 IF a dead/dying tree is observed that does not fit the hazard notification process as described in section 2.4 above and will not hold compliance for the next patrol cycle (either routine maintenance or CEMA Second Patrol),

THEN

1. ASSIGN "Routine" priority code to an unforeseen tag (if tree died between cycles) or a missed tree tag (if tree appears to have been missed by PI), on a handheld device, under CEMA account type with the Tier 3 project number for the circuit being inspected. Use Source Side Route Number 303030.
2. NOTIFY CEMA database management specialist (DMS) to generate tags for any dead or dying tree conditions found. COPY the CEMA contract forester (CF) and CEMA vegetation program manager (VPM) in the email request for work generation.

| Minimum Distance Requirements | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------|
| CPUC Rule 35, Table 1, Case 14 | PRC 4293 | Potential Line Sag ² |
| Applicable in High Fire Threat District (HFTD) at all times ¹ | Applicable in SRA during fire season ¹ | |
| 4 feet | 4 feet | 1-4 feet |
| 1) Vegetation must not encroach within the minimum distance at any time between inspection and one year or next scheduled tree work cycle. 2) Depending on span length, facility construction and conductor material, potential sag and sway can range from 1' at quarter-span to 4' at mid-span. | | |



VM CEMA Tier 3 Patrol Practices

DOCUMENT APPROVER

[REDACTED], Manager, VM CEMA – Electric Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager, VM CEMA

INCLUSION PLAN

This bulletin is a temporary document, to be used until the end of Tier 3 patrols.

EXHIBIT H-6

Identify and Mark Trees Requiring Special Equipment or Work Method

SUMMARY

This document provides guidance for vegetation management pre-inspectors (PIs) to assist in the identification of trees that require advanced rigging and roping techniques, the use of a crane, or any other special equipment to safely complete line clearance work.

The intent is to have PIs identify trees that might require the use of special equipment to be worked safely, beyond climbing or using a standard aerial lift, and communicate those trees to the tree contractor (TC), both in the Work Request and also with a unique mark on the tree.

The tree contractor must make the final determination of the methods and/or equipment used to safely perform the work.

Level of Use: Informational Use

AFFECTED DOCUMENT

- [Guidelines for Painting / Flagging Trees during Notification and Patrol](#)
- [TD-7102B-007, "Second Patrol - Scope of Work Requirements"](#)
- [TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)
- [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#)
- [TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)
- [TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure \(TRPP\)"](#)
- [Veg-1014JA, "Rule 35 Stand-Alone Secondary Facility Protect Job Aid"](#)

TARGET AUDIENCE

PG&E contractors: pre-inspector (PI), tree contractor (TC), quality control (QC)

Vegetation management operations

Vegetation management governance and support

Identify and Mark Trees Requiring Special Equipment or Work Method

WHAT YOU NEED TO KNOW

1 PI Evaluates Need for Special Equipment

- 1.1 IDENTIFY which trees need work AND which of those trees might require the use of special equipment beyond climbing or the use of a standard aerial lift to be worked safely.
- 1.2 For trees that might require the use of special equipment, ASSESS the following conditions for **Crew Type** selection:
 - No clear path to fall the tree
 - No healthy trees in immediate vicinity to tie into, or to use for rigging out of
 - Target(s) present in the fall/drop zone
 - Excessive or unnatural lean
 - Severe structural degradation (e.g., failing limbs, sloughing bark, cavity or cavities, upheaving soil, crack(s))

1. IF one or more of the conditions above exist to the extent that the tree might be unsafe to work by climbing or with the use of a standard aerial lift,

THEN ASSIGN Crew Type **SE** (for Special Equipment) in the Tree record in the mobile device.

2. MARK trees that have a Crew Type of SE and are prescribed for work with **SE** to indicate that special equipment might be required.



Identify and Mark Trees Requiring Special Equipment or Work Method

2 Tree Contractor Verifies Need for Special Equipment and/or Work Method



The tree contractor must make the final determination of the methods and/or equipment used to safely perform the work.

2.1 IF a tree is listed for work with Crew Type SE and/or marked with an SE,
THEN one or more of the conditions listed in Step 1.1 above exist,
AND the tree contractor must REVIEW the site to determine whether special equipment and/or techniques outside of the standard lift and climb practices are required to complete the work safely.

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Safety Vegetation Program Manager, Senior, Vegetation Management

INCLUSION PLAN

These changes are permanent. They will be integrated into the documents listed in the Affected Document section, above, during their next revision cycle.

EXHIBIT H-7

Vegetation Management Line Clearance Request

SUMMARY

This utility bulletin provides guidance for the Pacific Gas and Electric Company (PG&E) vegetation management (VM) staff to request that energy delivery (ED) personnel de-energize distribution electrical facilities. VM personnel generate a System Operations Notification in Systems Applications and Products in Data Processing (SAP) to make the request and then track the progress of the request in the VM Issue Tracking System (ITS). This bulletin also creates a consistent method for determining whether a distribution voltage line needs to be de-energized and grounded.

If a transmission voltage line must be de-energized, refer to [Utility Procedure TD-7103-P05, "Transmission Vegetation Management Imminent Threat Procedure"](#) and [Utility Procedure TD-7103P-09, "T&D Vegetation Management Hazard Notification"](#)-for guidelines on protection from energized or de-energized but ungrounded transmission voltage conductors during tree trimming or removal operations.

Level of Use: Informational Use

AFFECTED DOCUMENT

None.

TARGET AUDIENCE

Vegetation management (VM) operations personnel

- Pre-Inspection (PI) personnel
- Tree Crews (TC)

BEFORE YOU START

Review [Appendix A, "Strategy for Reduction of Vegetation-Related Planned Clearances."](#)

WHAT YOU NEED TO KNOW

1 Determining Action for the Service Drops Affected

1.1 IF a clearance is needed for a service drop serving only one home,

THEN PERFORM the following steps:

1. STOP.
2. CALL **1-800-PGE-5000** AND REQUEST disconnect/reconnect.

1.2 IF a clearance is needed for primary or secondary lines,

THEN PROCEED to [Section 2, "Creating a Job Packet."](#)

Vegetation Management Line Clearance Request

2 Creating a Job Packet

2.1 The following are the minimum items to be included in a job packet. They can be completed by any VM personnel:

1. Fill out a VM Clearance Notification Form, shown in [Appendix B](#). (See [Appendix C](#) for SAP status codes.)
2. Using the [ED Web Viewer](#), create a map with the tree location and nearest SAP pole number. (See [Appendix D, "ED Web Map Examples."](#))
3. Include a copy of the Work Request for the tree needing the clearance.

3 Creating an ITS Record

3.1 The VPM/contractor performs the following steps to create an ITS record for the clearance request:

1. In Back Office Vegetation Management Database (VMD) Functions, access the VMD LOCATION of the tree needing a line clearance.
2. In the LOCATION Status box tab, edit the Restriction to add a CLEARANCE REQUEST. The system automatically creates an issue number.
3. Click on the new auto-generated issue number to edit the issue record in the ITS Workbench.
4. In the Snapshot box, confirm that the Issue Type tab is CLEARANCE REQUEST.
5. Confirm that the Sub Type tab is either Primary or Secondary lines.
6. In the Date Initiated tab, enter the date the TC informed PG&E personnel about the clearance request.
7. Capture any notes in the Comments box. For example, record information such as reason a clearance is needed, tree data, which clearance avoidance measures have been considered, and who reviewed the tree before submitting the request.

4 Requesting Notification

4.1 The VPM/contractor sends the electronic job packet to the local VM clerk with a request for a Notification number.

4.2 Upon receipt of the job packet, the VM clerk performs the following tasks:

1. Create the Notification in the SAP system.
2. Send the notification number back to requester.

Vegetation Management Line Clearance Request

5 Creating the SAP Job Order

5.1 The vegetation program manager (VPM) or designee performs the following steps to create an SAP job order:

1. Convert the Notification to an Order Number in SAP AND confirm the accuracy of the following information:
 - Accounting
 - Electric crew type requested
 - Electric crew hours
 - Tree job duration

NOTE

- [Appendix C](#) provides information on accounting.
- RESP CCTR must be 11140 AND ReceiverCC must be 14737.

2. In the ITS record, UPDATE the Comments box with the SAP Notification and Order Numbers.

6 Requesting Placement of the Job on the Electric Work Schedule

6.1 The VPM must perform the following steps:

1. Ensure that the SAP Order Number is set to SRDY.
2. Send an email to the local Click scheduling mailbox (e.g., ClickScheduleYosemite) providing the following information:
 - a. The location address and job order number.
 - b. A request for a scheduled date for the line clearance.
3. Upon receiving an email confirming the scheduled date from ClickSchedule, perform the following tasks:
 - a. Forward the scheduled date to the general foreman to schedule tree crews for the work date.
Recommendation: Send a calendar invitation to the general foreman.
 - b. In the ITS record, update the Comments box with the scheduled date.
 - c. In the ITS Resolution Box, enter the scheduled date in the Date Resolved field tab.
 - d. In the ITS Resolution Box, enter the work request number in the Work Request # field.



Vegetation Management Line Clearance Request

7 Closing out the Project

7.1 IF tree work is completed

THEN the VPM must perform the following steps:

1. Close out the order in SAP.
2. Close the Notification in SAP.
3. Close the ITS record as follows:
 - a. Close the ITS record in the ITS Resolution box.
 - b. Click on the Close tab to record the date.
 - c. Confirm Plan Satisfied in the Why Closed tab.

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management – North

[REDACTED], Manager, Vegetation Management – South

DOCUMENT CONTACT

[REDACTED] Supervising Vegetation Program Manager, Central Coast North

INCLUSION PLAN

NA

This information does not need to be included in another document.

Vegetation Management Line Clearance Request

Appendix A, Strategy for Reduction of Vegetation-Related Planned Clearances

Page 1 of 2

1 Considering Alternatives to a Clearance

1.1 A key element of the PG&E customer satisfaction objectives related to reliable electric service is reducing the number of planned outages experienced by customers. VM is committed to this goal and works to reduce the number of planned outages by seeking alternatives that **do not impact worker or public safety**.



WARNING

The safety of work crews or the public must never be put at increased risk in an effort to avoid taking a clearance.

1.2 The following steps must be taken to evaluate the need for a clearance:

1. Before requesting a line clearance, the tree contractor general foreman/field supervisor must review the location in the field to determine whether a clearance is actually required or an alternative work method can be safely employed to avoid a clearance. All contractor safety policies, industry requirements, best management practices (BMPs), and essential controls must always be applied.
2. In consultation with the tree contractor, the VPM (and PG&E operations, maintenance and construction [OM&C] personnel as needed) must consider whether there are any possible solutions other than a clearance. Possibilities may include, but are not limited to the following alternatives:
 - Use a lift truck with greater extension capabilities.
 - Use back yard lift equipment (e.g., Spyder lift).
 - Obtain access from adjacent properties. Consider removing fences.
 - Use a crane outside the applicable safety work zone, which revised OSHA rule changes make more feasible.
 - Remove fencing or landscaping to facilitate lift truck access.
 - Rig limbs from alternate points.
 - Request that an OM&C line crew hold the line separate or install spacers (**secondary lines only**).
 - Check to determine whether other electric or VM jobs may be scheduled for a clearance on the same line.
 - Request that the line crew install “snakes” to rubber up the lines.

Vegetation Management Line Clearance Request

Appendix A, Strategy for Reduction of Vegetation-Related Planned Clearances

Page 2 of 2

2 Confirming the Job Scope before the Clearance Date

2.1 At least one week before the scheduled clearance date, return to the location AND perform the following tasks:

1. Identify any additional trees that require a clearance to be done safely.
2. Be sure to review adjacent spans that fall under the clearance zone.

3 Reducing the Duration of a Clearance

3.1 During a clearance, work the job in a manner that reduces the duration of the clearance without increasing worker or public risk. The following are some suggestions for doing so:

- Have tree crews prepared to work the tree before the lines are de-energized.
- If safety permits, have the climber in the tree before the grounds are installed.
- If safety permits, have the crane set-up before the shutdown starts.
- Keep operations, maintenance, and construction (OM&C) personnel apprised of progress so restoration can be performed promptly.
- Determine whether a line drop can significantly reduce the overall time required to complete the work.



Vegetation Management Line Clearance Request

Appendix B, VM Clearance Notification Form

Page 1 of 1

| | | | | |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------|
| VEGETATION MANAGEMENT CLEARANCE NOTIFICATION FORM | | PROBLEM DESCRIPTION (SHORT TEXT, 40 CHARACTERS MAXIMUM) RECOMMENDED: ADDRESS/CIRCUIT/LINE CLEARANCE/FOREMAN NAME AND NUMBER | | |
| | | | | |
| NOTIFICATION NUMBER: | | | | |
| ORDER NUMBER: | | PRIORITY CHOICES: <input type="checkbox"/> B <input type="checkbox"/> F B = URGENT COMPLIANCE F = SERVICE TO CUSTOMER | | |
| REFERENCE INFORMATION | | | | |
| SAP EQUIPMENT ID NUMBER FOUND FROM NEAREST POLE FROM WEBVIEWER: | | | | |
| CIRCUIT (STATION AND CIRCUIT NUMBER): | | | WORK TYPE CODE: 975 | |
| SOURCE SIDE DEVICE: | | | | |
| SECONDARY LINE CLEARANCE ONLY?: <input type="checkbox"/> YES <input type="checkbox"/> No | | | REPORTED BY (LAN): | |
| RESPONSIBILITIES | | | | |
| PLANNER GROUP: EDL | MAIN WORK CENTER: | RECEIVER CC: 14737 | RESP CCTR: 11140 | PLANNING ORDER NUMBER: |
| REQUIRED END DATE: ____ / ____ / ____ | ESTIMATED HOURS LINE NEEDS TO BE DE- ENERGIZED: | ESTIMATED LINE CREW HOURS: | ELEC. CREW CLASS SIZE: (CIRCLE CLASS SIZE) ED_OH_2 ED_OH_3 ED_OH_4 | CREW SIZE |
| LOCATION DATA | | | | |
| STREET ADDRESS: | | | | |
| NEAREST CROSS STREET: | | | | |
| CITY: | | | | |
| DIVISION CODE: | | COUNTY CODE: | | |
| FOREMAN INFORMATION (BELOW INFORMATION TO BE IN NOTIFICATION LONG TEXT) | | | | |
| PG&E VM CONTACT (JOB OWNER): | | LAN ID: | PHONE NUMBER: | |
| TT FOREMAN NAME: | | | PHONE NUMBER: | NOTIFICATION DATE (TODAY'S DATE): ____ / ____ / ____ |
| COMMENTS: LONG TEXT - DESCRIPTION OF TREE(S) AND HAZARD (SPECIES, OVERHANG, ETC.) AND ADDITIONAL LOCATION INFORMATION | | | | |
| WORK REQUEST NUMBER: | | | | |



Vegetation Management Line Clearance Request

Appendix C, SAP Status Codes

Page 1 of 2

Table C-1. County Codes

| | | | | | | | | | | | |
|-----|--------------|-----|-------------|-----|-----------|-----|-----------------|-----|---------------|-----|-------------------|
| 001 | Alameda | 011 | Glenn | 021 | Marin | 031 | Placer | 041 | San Mateo | 051 | Sutter |
| 002 | Alpine | 012 | Humboldt | 022 | Mariposa | 032 | Plumas | 042 | Santa Barbara | 052 | Tehama |
| 003 | Amador | 013 | Imperial | 023 | Mendocino | 033 | Riverside | 043 | Santa Clara | 053 | Trinity |
| 004 | Butte | 014 | Inyo | 024 | Merced | 034 | Sacramento | 044 | Santa Cruz | 054 | Tulare |
| 005 | Calaveras | 015 | Kern | 025 | Modoc | 035 | San Benito | 045 | Shasta | 055 | Tuolumne |
| 006 | Colusa | 016 | Kings | 026 | Mono | 036 | San Bernardino | 046 | Sierra | 056 | Ventura |
| 007 | Contra Costa | 017 | Lake | 027 | Monterey | 037 | San Diego | 047 | Siskiyou | 057 | Yolo |
| 008 | Del Norte | 018 | Lassen | 028 | Napa | 038 | San Francisco | 048 | Solano | 058 | Yuba |
| 009 | El Dorado | 019 | Los Angeles | 029 | Nevada | 039 | San Joaquin | 049 | Sonoma | 099 | Multiple Counties |
| 010 | Fresno | 020 | Madera | 030 | Orange | 040 | San Luis Obispo | 050 | Stanislaus | | |

Table C-2. Planning Orders

| Pln Ord | Pln Ord Desc |
|---------|----------------------|
| 5002297 | Tree Trim Routine-PN |
| 5002298 | Tree Trim Routine-SJ |
| 5002299 | Tree Trim Routine-KE |
| 5002300 | Tree Trim Routine-CC |
| 5002301 | Tree Trim Routine-LP |
| 5002302 | Tree Trim Routine-ST |
| 5002303 | Tree Trim Routine-NV |
| 5002304 | Tree Trim Routine-NC |

| Pln Ord | Pln Ord Desc |
|---------|----------------------|
| 5002305 | Tree Trim Routine-NB |
| 5002306 | Tree Trim Routine-SI |
| 5002307 | Tree Trim Routine-DI |
| 5002429 | Tree Trim Routine-SF |
| 5002430 | Tree Trim Routine-DA |
| 5002431 | Tree Trim Routine-FR |

| Pln Ord | Pln Ord Desc |
|---------|----------------------|
| 5002432 | Tree Trim Routine-ML |
| 5002433 | Tree Trim Routine-YO |
| 5002434 | Tree Trim Routine-SA |
| 5002435 | Tree Trim Routine-EB |
| 5221512 | EEVM YB Projects |
| 5259480 | EEVM WWR Project |

Vegetation Management Line Clearance Request

Appendix C, SAP Status Codes

Page 2 of 2

Table C-3. Main Work Centers

| | | | | | | | |
|----------|--------------|----------|---------------|----------|-----------------|----------|----------------|
| ANGLSCMP | Angels Camp | HMOONBAY | Half Moon Bay | OAKHURST | Oakhurst | TABLEMTN | Table Mountain |
| ANTIOCH | Antioch | HOLLISTR | Hollister | OAKLAND | Oakland | TAFT | Taft |
| AUBERRY | Auberry | JACKSON | Jackson | OAKPORT | Oakport | TEMPLETN | Templeton |
| AUBURN | Auburn | KETTLEMN | Kettleman | OROVILLE | Oroville | TESLA | Tesla |
| BKRSFLD | Bakersfield | KINGCITY | King City | PETALUMA | Petaluma | TOPOCK | Topock |
| BUELLTON | Buellton | LAKEPORT | Lakeport | PISMOBCH | Pismo Beach | TRACY | Tracy |
| BURNY | Burney | LAKEVLLE | Lakeville | PLCRVLLE | Placerville | TURLOCK | Turlock |
| CHICO | Chico | LEMOORE | Lemoore | PTARENA | Point Arena | UKIAH | Ukiah |
| CINNABAR | Cinnabar | LIVRMORE | Livermore | QUINCY | Quincy | VACADXON | Vaca Dixon |
| CLRLAKE | Clear Lake | LKALMNOR | Lake Almanor | RDGECRST | Ridgecrest | VACAVLLE | Vacaville |
| COALINGA | Coalinga | LODI | Lodi | REDBLUFF | Red Bluff | VALLEJO | Vallejo |
| COLMA | Colma | LOSBNOS | Los Banos | REDDING | Redding | VICTOR | Victor |
| CONCORD | Concord | LOSMDNOS | Los Medanos | RICHMOND | Richmond | WALNTCRK | Walnut Creek |
| COTTONWD | Cottonwood | MADERA | Madera | RIOVISTA | Rio Vista | WASCO | Wasco |
| CUPRTINO | Cupertino | MANTECA | Manteca | RNDMTN | Round Mountain | WILLITS | Willits |
| DAVIS | Davis | MARIPOSA | Mariposa | ROCKLIN | Rocklin | WILLOWS | Willows |
| DELMAR | Del Mar | MARTIN | Martin | ROSEVLLE | Roseville | WLLWCRK | Willow Creek |
| DINUBA | Dinuba | MCMAUDE | McMaude | SACTO | Sacramento | WOODLAND | Woodland |
| DOWNVLLE | Downieville | MEADOWLN | Meadow Lane | SALINAS | Salinas | WTSNVLLE | Watsonville |
| EDENVALE | Edenvale | MERCED | Merced | SELMA | Selma | | |
| EUREKA | Eureka | MERIDIAN | Meridian | SNCARLOS | San Carlos | | |
| FORTUNA | Fortuna | METCALF | Metcalf | SNFRAN | San Francisco | | |
| FREMONT | Fremont | MIDWAY | Midway | SNJOSE | San Jose | | |
| FRESNO | Fresno | MILPITAS | Milpitas | SNLUISOB | San Luis Obispo | | |
| FTBRAGG | Fort Bragg | MODESTO | Modesto | SNMATEO | San Mateo | | |
| FULTON | Fulton | MONTEREY | Monterey | SNRAFAEL | San Rafael | | |
| GARBRVLE | Garberville | MORROBAY | Morro Bay | SNRAMON | San Ramon | | |
| GATES | Gates | MOSSLNDG | Moss Landing | SONORA | Sonora | | |
| GREGG | Gregg | MRYSVLLE | Marysville | STCRUZ | Santa Cruz | | |
| GRSSVLLY | Grass Valley | NAPA | Napa | STMARIA | Santa Maria | | |
| GYSRVLLE | Geyserville | NEWMAN | Newman | STOCKTON | Stockton | | |
| HAYWARD | Hayward | OAKDALE | Oakdale | STROSA | Santa Rosa | | |

Vegetation Management Line Clearance Request

Appendix D, ED Web Map Examples

Page 1 of 1

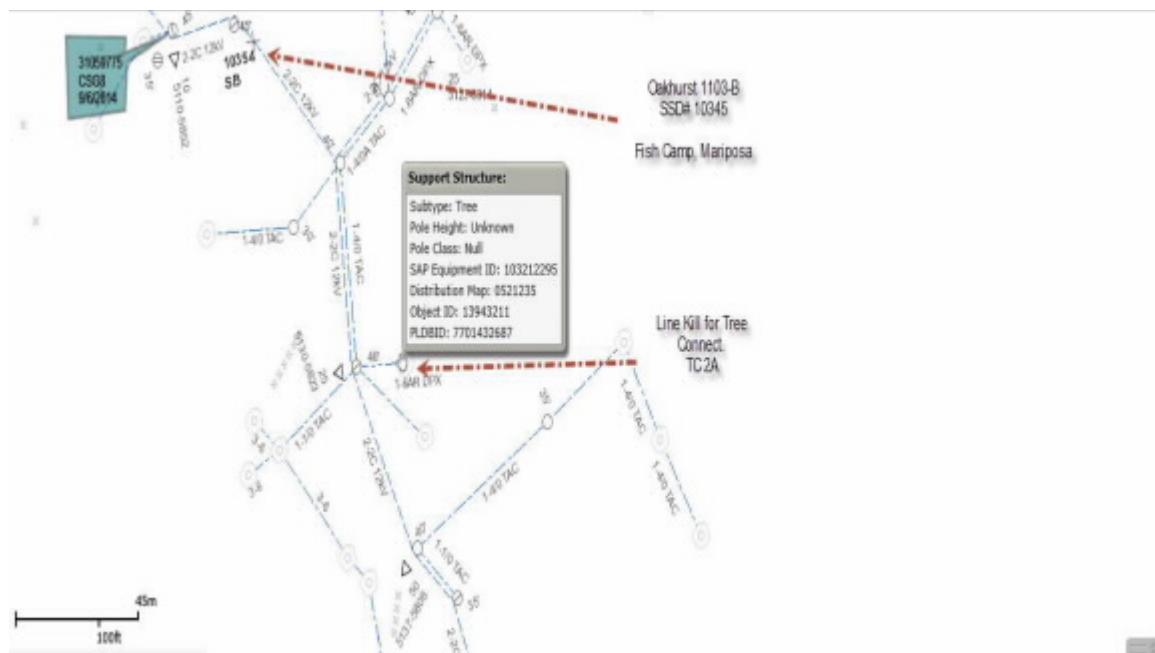
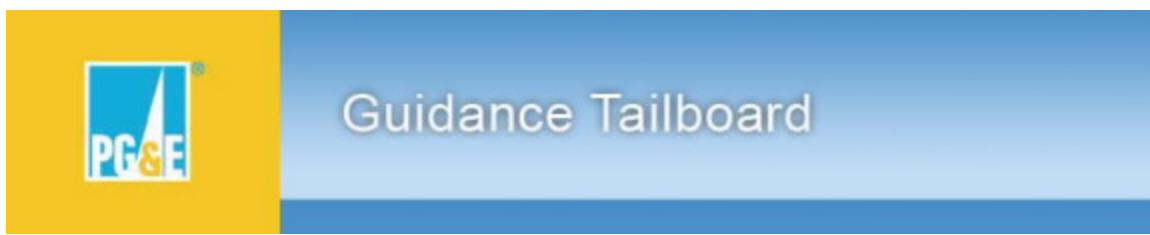


Figure D-1. Example 1



Figure D-2. Example 2

EXHIBIT H-8



DOCUMENT NAME: CEMA High Fire Threat District Planning

DOCUMENT NUMBER: TD-7102B-019, Rev. 0

TAILBOARD ISSUED: 02/13/2019 TAILBOARD BY: 02/22/2019

What is changing?

This new utility bulletin provides guidance for Catastrophic Event Memorandum Account (CEMA) High Fire-Threat Districts (HFTDs) planning for Zone 1 (tree mortality), Tier 2 (elevated fire risk), and Tier 3 (extreme fire risk) areas. California Public Utilities Commission (CPUC) decision R.15-05-006 adopted regulations to enhance fire safety in designated HFTDs areas across California. On February 15, 2018, the electric vegetation management (EVM) program began applying an increased minimum clearance requirement in PG&E's service areas where the HFTDs are enacted.

Why does it matter?

It is essential that all lines within the HFTDs areas are captured in the plan and patrolled to meet the PG&E obligation to regulatory requirements. Entire circuits not currently in the CEMA plan must be added to the project management database (PMD) before inspection. This bulletin specifies the steps required by the pre-inspector (PI) and database management specialist (DMS).

Required Action

Review bulletin with all VM personnel and contractors associated with second patrol practices.

Tools and Training

NA

Timeline

| Date | Activity |
|------------|-------------------|
| 02/13/2019 | Publication date |
| 02/22/2019 | Tailboard by date |

EXHIBIT H-9

Distribution Routine Patrol Procedure (DRPP)

SUMMARY

The purpose of the Distribution Routine Patrol Procedure (DRPP) is to:

- Detail the steps and requirements for routine inspection of vegetation around PG&E electric distribution lines, including distribution underbuild lines.
- Maintain the safe and reliable operation of distribution and underbuild facilities.

Level of Use: Informational Use

TARGET AUDIENCE

- Vegetation Management Governance and Support
- Vegetation Management Operations
- VM Contractors: Pre-Inspector (PI), Tree Contractor (TC), Quality Control (QC), Quality Assurance (QA), Vegetation Control (VC)

SAFETY

PG&E or contract worker must review and follow all applicable safety standards and procedures before performing work, which includes review of tailboards and wearing appropriate Personal Protective Equipment for the job.

BEFORE YOU START

1. Ensure familiarization with entire procedure including the Definitions Section of this document
2. Read Distribution Vegetation Management Standard (DVMS)
3. Read Transmission Vegetation Management Standard (TVMS)
4. Read Transmission Routine (Non-Orchard) Patrol Procedure (TRPP)
5. Read Transmission and Distribution Vegetation Hazard Notification Procedure

Distribution Routine Patrol Procedure (DRPP)

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PROCEDURE STEPS

1 Distribution Patrol Practices

1.1 Pre-Inspection and tree work is performed in accordance with PI and TC Contract Specifications, Distribution Vegetation Management Standard (DVMS), practices described in this document, and other applicable standards and procedures.

1.2 PI INSPECTS lines once per cycle, generally November 15th of the current year – November 14th of the following year.

1. IF VM employee or contractor identifies any of the following conditions:
 - Poses a hazard to the public or utility worker
 - Negatively impacts service reliability or asset life of PG&E facilities
 - Adversely impacts the ability to safely operate or inspect PG&E's facilities
 - Creates a condition that causes PG&E's facilities to be out of compliance with California Public Utilities Commission (CPUC) General Order (G.O.) 95 or 128

THEN NOTIFY the area Vegetation Program Manager (VPM) and Senior Consulting Utility Forester (SCUF).

2. IF the condition only involves PG&E facilities or poses an immediate risk,
THEN FOLLOW the Reporting Abnormal Field Conditions Procedure.

Distribution Routine Patrol Procedure (DRPP)

3. IF the condition is created by a 3rd party Utility (electric, communication, etc.),
THEN FOLLOW the Notification of Conditions to Third-Party Utility Procedure, TD 2014P-01.
4. IF the 3rd party is a non-utility,
THEN FOLLOW the Notification of Conditions to Non-Utility Third-Party Procedure, TD 2015P-01.
5. Primary Lines:
 - a. IF a tree is evaluated as having potential to encroach within minimum distances required to maintain compliance with G.O. 95, Rule 35, or PRC 4293 (see Appendix A, Minimum Distance Requirements (MDRs)),
OR may fall into or impact primary conductors before next scheduled prune,
THEN LIST tree in the handheld device for one of the following:
 - Prune
 - Remove
 - Facility Protect (FP)
6. Secondary Lines:
 - a. IF a tree shows evidence of strain or abrasion on secondary lines,
OR may fall into or otherwise impact secondary conductors,
THEN RECOMMEND one of the following:
 - Prune
 - Remove
 - Facility Protect (FP)
 - Reconstruction, as advised by Maintenance and Construction (M&C)

Distribution Routine Patrol Procedure (DRPP)

NOTE

Strain or abrasion on a conductor is present when contact with vegetation significantly compromises the structural integrity of distribution supply facilities. Contact between vegetation and conductors in and of itself does not constitute non-conformance with the rule.

7. Distribution Underbuild:

- a. Distribution PI INSPECTS distribution underbuild spans per requirements for transmission, primary and secondary, as described in this document and the Transmission Routine (Non-Orchard) Patrol Procedure (TRPP).

NOTE

Transmission PI is responsible for listing tree work on transmission spans that begin with underbuild and then diverge.

1.3 Inspection Area

1. Distribution PI INSPECTS:

- a. All vegetation with potential to grow, sway, or fall into PG&E's electric distribution and distribution underbuild conductors.
- b. Distribution underbuild for vegetation that could fall into transmission structures, guys, or poles, regardless of Right-of-Way (ROW) or easement width.
- c. Areas outside fenced areas, including portions of distribution line span crossing substation fence at substations, generation stations, or switchyards in inspection area.
 - IF distribution PI identifies vegetation inside substation, generation substation, or switchyard that requires tree work,

THEN NOTIFY VPM.

1.4 Idle Lines

1. IF idle or de-energized conductor is main line,

THEN distribution PI will treat de-energized conductor as if energized,

AND PATROL and PRUNE to maintain compliance.

2. IF circuit map identifies tap line as idle,

THEN line is NOT patrolled or pruned.

Distribution Routine Patrol Procedure (DRPP)

3. IF tap line is not identified as idle on circuit map,
AND is de-energized by discontinuation of conductor (jumpers either removed, disconnected, or entire span is removed),
THEN line is NOT patrolled or pruned,
AND PI will COMPLETE Idle Facilities Investigation Work form (Idle Facilities Tag),
AND FORWARD Idle Facilities Tag to VPM.
4. IF an Idle Facility Tag does not already exist,
THEN VPM will EMAIL Idle Facilities Tag to Public Safety & Regulatory (PS&R) for input to SAP,
AND PS&R will NOTIFY VM if line is only seasonally or temporarily idle.
5. IF an Idle Facilities Tag already exists for removal of idle facility,
THEN line will NOT be patrolled or pruned,
AND PI will FILE copy of Idle Facilities Tag in the active circuit folder for reference during next patrol.
6. IF no Idle Facilities Tag exists for removing an idle facility,
THEN VPM will FORWARD the completed Idle Facilities Tag to M&C Compliance Supervisor,
AND line is NOT patrolled or pruned,
AND PI will FILE copy of submitted Idle Facilities Tag in the active circuit folder.

1.5 Non-PG&E Owned Distribution Lines

1. IF during patrol, PI identifies Private Facilities (PF),
THEN NOTIFY VPM,
AND FOLLOW the requirements of the Private Facilities Procedure (Dec. 2015).

Distribution Routine Patrol Procedure (DRPP)

2 Distribution Patrol Prescriptions

2.1 Hazard Notification (HN)

NOTE

A Hazard Notification occurs when a vegetation condition affecting distribution or transmission lines has the potential to become an imminent threat. This condition could be the result of vegetation encroaching on the MDR or may arise from outside the ROW due to potential tree or limb failure.

1. IF PI identifies a HN tree,

THEN FOLLOW the requirements of the Transmission and Distribution Vegetation Hazard Notification Procedure.

2.2 General Practice – All Primary, Secondary, and Distribution Underbuild Lines

1. PI will:

- a. PRESCRIBE pruning in accordance with the most current ISA, Best Management Practices – Utility Pruning of Trees – Special Companion Publication to the ANSI 300 Part 1 and Part 7 (IVM).
- b. CONSIDER minimum clearances per MDR (Appendix A) sufficient to maintain mandated clearances under all foreseeable conditions of:
 - Tree Growth
 - Wind
 - Weather
 - Line loading
 - Line sag
 - Line blow-out
 - Tree sway
 - Snow Loading
- c. LIST hazard trees for removal or facility protect.
- d. PRESCRIBE stump treatment when removing re-sprouting species, unless specifically denied by the property owner, land manager, or regulations.

Distribution Routine Patrol Procedure (DRPP)

2.3 Priority Work Codes

1. IF PI identifies a tree for routine pruning or removal work that may not maintain compliance with MDR (Section 2.3.4),

OR may be in contact with Tree Wire before TC would normally complete work,
THEN ASSIGN priority code "Accelerate",

AND in consultation with VPM, CREATE Tag for issue early to TC.

NOTE

Additional management and follow through to completion on accelerate trees may be necessary to mitigate risk and ensure timely completion. PI should be aware of TC schedule and know approximately how many weeks until the work will be completed.

2. IF PI identifies tree for routine pruning or removal work that is currently in compliance with the MDR,

AND tree will maintain compliance until TC is scheduled to complete work,
THEN ASSIGN priority code "Routine".

NOTE

For priority code determination, trees at locations with Tree Wire that are not in contact with tree wire can be considered in compliance with MDR. See Major Woody Stem Exemption Procedure to identify tree wire.

3. IF PI identifies tree for routine pruning or removal on secondary conductors,

THEN ASSIGN priority code "Routine".

4. Facility Protect (FP)

- a. IF PI identifies FP tree that has potential to fail before TC is scheduled to complete work,

THEN FOLLOW requirements per Transmission & Distribution Vegetation Hazard Notification Procedure.

- b. IF PI identifies FP tree that is not likely fail before TC can complete work,

THEN ASSIGN priority code "Routine".

Distribution Routine Patrol Procedure (DRPP)

2.4 Pruning

1. PI PRESCRIBES clearance, sufficient to obtain 2 - 3 years clearance and no less than one year before next prune.
 - a. IF clearance to maintain one year compliance is not attainable based on field conditions and not property owner refusal,
THEN FOLLOW the instructions in Section 2.8 of this document, Bi-Annuals.
 - b. IF tree is being worked for current year compliance,
THEN CLEAR all overhanging branches to minimum of 15 feet, unless branches qualify for Major Woody Stem exemption.

2.5 Removal

1. IF PI identifies tree that will not hold compliance by pruning for one year minimum,
OR required clearance would leave the tree less than 4.5 feet tall,
THEN PI should PRESCRIBE removal, regardless of Diameter at Breast Height (DBH).
2. IF tree DBH is less than 12 inches,
THEN PI should PRESCRIBE removal rather than prune.
3. IF tree DBH is equal to or greater than 12 inches and less than 24 inches,
AND it is not possible to obtain 2-year clearance through pruning,
THEN PI should PRESCRIBE removal rather than prune.
4. IF the DBH is equal to or greater than 24 inches,
AND tree is unlikely to encroach for period greater than one year,
THEN PRUNE tree rather than remove.

2.6 Hazard Trees / Facility Protection Trees

1. IF PI identifies trees or portions of trees that are dead, shows signs of disease, decay or ground or root disturbance,
AND may fall into or otherwise impact primary or secondary conductors,
THEN PRESCRIBE work to make tree Facility Safe per Facility Protect and Work Difficulty Classification Procedure.

Distribution Routine Patrol Procedure (DRPP)

NOTE

This requirement does not apply to Rule 16 secondary line serving a single customer, typically a service drop.

2.7 Refusal

1. IF property owners, land managers, Federal, State or local agency policies or site conditions restrict, constrain, or otherwise interfere with the ability to meet the requirements of this DRPP,

THEN PI will FOLLOW the requirements of the Distribution Vegetation Refusal Procedure.

2.8 Bi-annuals

NOTE

The purpose of the bi-annual cycle code is to effectively address fast growing trees that may not hold compliance for a full cycle. The intent is not simply to identify and perform bi-annual work, but to find the best way to manage these trees.

1. IF PI identifies a potential bi-annual tree on a routine OR bi-annual patrol, THEN CONSULT with the PI Supervisor to consider options described in Alternatives to Manage and Reduce Bi-Annuals document (Appendix B).
2. IF clearance to maintain one-year compliance is not attainable, AND no other alternatives are available, THEN ASSIGN bi-annual cycle code.
3. IF tree cannot be kept compliant even with bi-annual work, THEN NOTIFY VPM.
4. Following completion of circuit, the Database Manager will:
 - a. PRINT list of all Bi-annuals listed for PI Supervisor to evaluate and enter written comments.
 - b. FORWARD list to VPM per VM Database Monitoring Procedure.

Distribution Routine Patrol Procedure (DRPP)

5. Bi-Annual Patrol

NOTE

The goal of a bi-annual patrol is to quickly evaluate trees which may become compliance issues before next routine cycle and prescribe additional work if needed.

- a. PI REVIEWS Alternatives to Manage and Reduce Bi-Annuals before prescribing work (Appendix B).
- b. Supervisor and PI MEET to set goals for unit reduction prior to start of a bi-annual patrol.

6. Planning in Project Management Database (PMD)

- a. Depending on the number of bi-annuals in a division, VPM CREATES additional projects to account for all bi-annual trees.
- b. VPM will:
 - (1) ADD projects to PMD to track bi-annual trees.
 - (2) CREATE multiple bi-annual projects depending on local designations, including district and contractor.

7. Pre-Loaded Data

NOTE

A bi-annual preload file contains only addresses that have at least one tree set to "bi-annual" as the cycle.

- a. PI will:
 - (1) CONDUCT bi-annual patrols using PMD pre-loaded data.
 - (2) CREATE list of all circuits in quarter in which the patrol is performed.
 - (3) MOVE data that is not part of the pre-load to history.

Distribution Routine Patrol Procedure (DRPP)



CAUTION

DO NOT change the routing of the locations during bi-annual patrol as they do not have all the data for that source side, or source side routing number.

DO NOT "add" locations that are not in pre-load as this can cause duplicate locations in inventory.

CHANGE information only when appropriate as same data is part of normal routine preload, including changing a tree from bi-annual back to routine cycle if tree has maintained compliance and will continue to hold until next routine cycle.

- b. PI will make every effort to notify each customer personally to discuss removals.
- c. IF during bi-annual patrol PI identifies additional trees which will not hold compliance until the next routine cycle,

THEN ENTER tree as "Tag", with appropriate handheld code.

NOTE

Because of their unpredictable growth and proximity to the lines, Major Woody Stems with epicormic sprouting should not be managed as bi-annuals.

- d. Upon work generation, Database Manager ASSIGNS PMD project number to each TC Work Request associated with that bi-annual patrol.
- e. TC COMPLETES tree work within 30-day maintenance window.



CAUTION

DO NOT ADD trees on a bi-annual cycle unless approved by SCUF or VPM.

2.9 Stump Re-Sprouts

- 1. PI will:
 - a. VERIFY stump death of past removals from previous patrols for all re-sprouting species during current routine patrol.
 - b. LIST all re-sprouting stumps for tree re-work in VMD using trim code "TRT" when following conditions are met:

Distribution Routine Patrol Procedure (DRPP)

- Stump is or will become a compliance issue in future, regardless of time frame.
- Herbicide treatment was prescribed and customer, agency, or local ordinances approve the herbicide application.
- Herbicide will not translocate to other living vegetation.
- Re-sprouts are not root sprouts.

c. DELETE tree record from handheld when stump is verified as dead.

d. NOTIFY customer of re-treat in person or with door card.

e. UPDATE VMD records and add comments when TC notifies PI of locations where herbicide treatments cannot be applied.

2. TC will:

- a. RE-TREAT and kill any re-sprouts that have been prescribed trim code "TRT" during routine activities.
- b. VERIFY herbicide treatments result in the death of stump.
- c. NOTIFY PI on same working day when re-sprouts have been prescribed for re-treat work and the stump cannot be treated.
 - (1) Enter NO WORK on the Work Request.
- d. PRUNE stump re-sprout unit when unit cannot be re-treated and will be non-compliant before next annual cycle, and documents and invoices the unit as an "add".

2.10 Palms

1. PI will:

- a. REVIEW VMD pre-patrol report prior to patrolling circuits to identify potential palm tree problems on circuit.
 - IF PI identifies a palm in the field that routine pruning will not maintain compliance for at least one cycle,

THEN PRESCRIBE tree removal, or removal of "heart" of palm.

Distribution Routine Patrol Procedure (DRPP)

- IF palm is in contact with line(s),
 - THEN FOLLOW Transmission & Distribution Hazard Notification Procedure,
 - AND CONTACT property owner to discuss removing palm.
- IF customer is not present at time of visit,
 - THEN LEAVE the Palm Tree Alert door card with name and contact number,
 - AND contact PG&E clerk to obtain customer's phone number to discuss palm removal,
 - AND PI NOTIFIES VPM of each Palm identified in the field that may require the Palm Letter.

NOTE

Palm Letters are only used when removal of tree or "heart" of the palm is required to maintain compliance.

2. VPM will:

- a. CONDUCT site visit, when appropriate, to verify condition of palm(s) after receiving information from PI.
 - IF VPM or PI is unable to contact property owner,
 - THEN VPM will make an additional attempt to NOTIFY customer that their palm needs removal.
 - IF customer responds and refuses to remove the palm,
 - THEN VPM will FOLLOW steps described in the Distribution Vegetation Refusal Procedure.

3. PI will:

- a. IDENTIFY palm species code (Queen, Fan, or Date).
- b. REFER to Strategies to Manage and Reduce Palms (Appendix C) if tree removal is not feasible.
- c. RECOMMEND remediation based on tree and site conditions.
- d. REVIEW VMD palm work history.

Distribution Routine Patrol Procedure (DRPP)

e. FORWARD information on new palm plantings under PG&E facilities to VPM.

- IF there is no response after repeated attempts to contact property owner,

THEN VM Palm Letter is SIGNED by VPM and SENT to property owner.

f. The Palm Letter:

(1) LISTS all Palm Letters sent to property owners in the Issue Tracking System (ITS) with record Type = Non Refusal, Subtype: = Palm Letter.

(2) INDICATES palm species in Comment section.

(3) DESCRIBES conditions and any communications with property owner in the ITS Comments section.

(4) RECORDS the date pruning is scheduled to occur in the ITS Follow-up Section.

- IF the property owner responds and refuses to remove the palm,

THEN as appropriate, FOLLOW steps outlined in the Distribution Vegetation Refusal Procedure.

g. PROVIDE photo documentation of palm condition, if necessary.

4. VPM will:

a. DECIDE whether any outside agencies need be notified.

- IF palm is on a section of line which appears to be Rule 16,
THEN land rights must be requested before Palm Letter is sent.

- IF Palm Letter is sent and customer does not respond within 10 calendar days,

THEN TC will PROCEED with the tree work.

5. Database Manager will:

a. CHANGE the trim type to Top in VMD.

b. ADD prescribed clearance in the Comment section, regardless of where the heart of the palm is located.



Distribution Routine Patrol Procedure (DRPP)

c. PROVIDE TC with copies of the Work Request and the following:

- Removal Form, with detailed tree work and debris removal prescriptions, signed by VPM
- Palm Letter
- Land Rights Letter, if land rights were requested

2.11 Orchards

1. Orchard PI will:

- a. INSPECT all orchards per requirements for transmission, primary and secondary, as described in this document and Transmission Routine (Non-Orchard) Patrol Procedure (TRPP).
- b. FOLLOW Orchard Best Management Practices (Appendix D).

END of Instructions

Distribution Routine Patrol Procedure (DRPP)

DEFINITIONS

Distribution Underbuild – The presence of electric distribution lines located directly under and parallel with the transmission lines, and attached to the same pole or structure.

Easement (or Right of Way) – For the purposes of this Standard, the as-built condition of a geographically described strip of land upon which PG&E's electric facilities are constructed, operated and maintained. "Easement" refers to the legal description of that corridor.

Hazard Condition – A vegetation condition affecting transmission or distribution lines which does not pose an imminent threat, but where the condition has the potential to become an imminent threat and is at or encroaching the PG&E clearance distance.

Hazard Trees - Any tree whose height is at or approaching the PG&E Minimum Clearance Requirements (Appendix A).

- **All lines:** Trees that are dead, show signs of disease, decay or ground or root disturbance, which may fall into or otherwise impact the conductors, towers or guy wires before the next inspection cycle.

Minimum Clearance Requirement – PG&E defined minimum clearance designed to meet or exceed all applicable regulatory requirements at all times.

Orchard – Any commercial-producing orchard. Only includes trees that are part of the production crop.

Orchard Tree – Any commercial-producing fruit or nut tree that is part of a production crop.

Private Facilities (PF): Includes all Private Owned Lines (POL), Primary Metered / Primary Service (PM / PS), Private Owned Transmission Lines (POTL).

- **Private Owned Line (POL):** Private lines are defined as distribution main or line extension facilities, or service facilities that are not owned, operated and maintained by PG&E.
- **Primary Metered / Primary Service (PM / PS):** All pole-top primary metering installations with Primary Service are considered Primary Metered. Facilities beyond the interconnection point should be considered customer owned.
- **Private Owned Transmission Lines (POTL):** All privately owned line connected to PG&E facilities designated on GIS / ETGIS or other application as Non-PG&E Owned energized at 60KV or greater connected to PG&E facilities

Right-of-Way – See Easement.

Refusal – A situation that occurs when a customer / property owner refuses to allow PG&E to perform pre-inspection work or complete 100% of the work prescribed.

Distribution Routine Patrol Procedure (DRPP)

Tap Line – Section of overhead primary line that deviates off of the mainline of a distribution circuit. Tap Line may be a hard tap (non-fused) or a fused tap.

IMPLEMENTATION RESPONSIBILITIES

The Vegetation Management Document Owner is responsible for the rollout and communication of this Standard as well as the periodic review of this document. Vegetation Management Operations is responsible for the distribution of this Standard by providing training and conducting regular reviews.

GOVERNING DOCUMENT

Distribution Vegetation Management Standard

Transmission Vegetation Management Standard

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

ANSI/ISO/ASQC Q10011 Guidelines for Auditing Quality Systems

REFERENCE DOCUMENTS

Database Monitoring Procedure

Distribution Refusal Procedure

Mapping Procedure

Private Facilities Procedure (Dec. 2015)

Project Management Database (PMD) Standardization Guidelines (Dec. 2015)

Transmission & Distribution Vegetation Hazard Notification Procedure

Transmission Routine (Non-Orchard) Patrol Procedure (TRPP)

Notification of Conditions to Third-Party Utility Procedure, TD-2014P-01

Notification of Conditions to Non-Utility Third-Party Procedure, TD- 2015P-01

Distribution Routine Patrol Procedure (DRPP)

APPENDICES

Appendix A: Minimum Distance Requirements

Appendix B: Alternatives to Manage and Reduce Bi-Annuals

Appendix C: Strategies to Manage and Reduce Palms

Appendix D: Orchard Best Management Practices

ATTACHMENTS

NA

DOCUMENT RECISION

NA

DOCUMENT APPROVER

[REDACTED], Vegetation Management Operations Manager - North

[REDACTED] Vegetation Management Operations Manager - South

DOCUMENT OWNER

[REDACTED], Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|-----------------|-------------------------------------------------------------------------------------|
| Entire document | This is a new procedure, formatted to meet GDM requirements. |
| Entire document | Renumbered per the GDM Numbering Procedure in preparation for Documentum migration. |

Distribution Routine Patrol Procedure (DRPP)

Appendix A: Minimum Distance Requirements

MINIMUM DISTANCE REQUIREMENTS

| CPUC Rule 35 | Santa Barbara County CPUC Rule 35, Table 1, Case 14 (hhh) | PRC 4293 | Potential Line Sag (2) (feet) |
|------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------|
| Applicable at all times (1) (feet) | Applicable in extreme and very high fire threat zones in Southern California at all times (1) (feet) | Applicable in SRA during fire season (1) (feet) | |
| 1.5' | 4' | 4' | 1 - 4' |

- 1) Vegetation shall not encroach within the minimum distance at any time between inspection and one year or next scheduled tree work cycle.
- 2) Depending on span length, facility construction and conductor material, potential sag and sway can range from 1' at quarter-span to 4' at mid-span.

Distribution Routine Patrol Procedure (DRPP)

Appendix B: Alternatives to Manage and Reduce Bi-Annuals

ALTERNATIVES TO MANAGE & REDUCE BI-ANNUALS

PURPOSE: The purpose of the Bi-annual Cycle code is to effectively address fast growing trees that may not hold compliance for a full trim cycle. The intent is not simply to identify and perform bi-annual trims, but to find the best way to manage such trees using all the available tools listed below. These alternatives include increasing line clearance, changing the trim type, pursuing removal, applying tree growth regulators, or seeking engineering solutions. If it is found that a tree cannot be kept in compliance even with bi-annual pruning, as with palms, the VPM shall be notified.

DEFINITION: A bi-annual is a tree that should be inspected between routine inspections so as to ensure compliance with applicable laws and regulations. **However, the following management alternatives must be considered before listing a tree as a bi-annual:**

| ALTERNATIVE | CONSIDERATIONS |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Refusal | <ul style="list-style-type: none"> IF property owners, land managers, Federal, State or local agency policies or site conditions restrict, constrain, or otherwise interfere with the ability to meet the requirements of this DRPP, then follow the Distribution Vegetation Refusal Procedure. |
| Increase Line Clearance Prescriptions | <ul style="list-style-type: none"> Additional notification is necessary if larger wood needs to be taken from the tree to maintain compliance and meet ANSI A300 standards. Set realistic expectations with the customer but do not negotiate clearance distances. Determine whether previous clearance distance maintained compliance for at least one (1) trim cycle. May need to check last trim date in VMD. Increase clearance to match site conditions and species' specific growth rates. |
| Change Trim Type | <ul style="list-style-type: none"> Determine whether the previous trim type contributed to the tree not maintaining compliance for at least one (1) trim cycle. Prescribe directional pruning versus topping (if possible). |
| Seek Removal | <ul style="list-style-type: none"> Is this an appropriate removal? Consider the following: <ul style="list-style-type: none"> Cost-effectiveness Tree species, DBH, and height Reliability and facility protection Is the trunk positioned below or within close proximity to the conductors? Will replacement tree(s) facilitate successful removal negotiations with the customer? Use herbicides on removals for control of re-sprouting species unless directed otherwise by the customer. Do the land rights give PG&E the authority to remove the tree in question? |
| Apply Tree Growth Regulators | <ul style="list-style-type: none"> TGRs can help PG&E more cost-effectively manage fast growing species, manage more trees annually, extend trim cycles, increase reliability, and reduce biomass as it relates to trimming and cleanup time. Do not discuss TGRs with the customer. TGR notification requires specialized training. Consult your SCUF or VPM to find out more about your area-specific TGR management plan. |

Distribution Routine Patrol Procedure (DRPP)

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|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seek Engineering & Line Construction Solutions | <ul style="list-style-type: none">• Do not discuss engineering alternatives with the customer (VPM/SCUF only).• The best time to address the adverse effects of trees on distribution lines is at the time of initial design.• Notify the SCUF of potential infrastructure alterations including new line construction, upgrades to the electrical system, and road widening or relocation projects.• Consider overhead construction alternatives including:<ul style="list-style-type: none">◦ Alley or wing arm construction◦ Compact construction◦ Covered overhead primary (i.e. "Ray Chem")◦ Squirrel guard on tree (use "side wrap" code in hand held)◦ Spacer ("Hendrix") system (combination of covered wire and compact construction)◦ Aerial cable• Only in exceptional cases can the cost of converting an existing system to an alternative construction type be justified on the basis of reliability, avoided cost of future tree maintenance, or infrastructure repair. |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Distribution Routine Patrol Procedure (DRPP)

Appendix C: Strategies to Manage and Reduce Palms

STRATEGIES TO MANAGE AND REDUCE PALMS

PURPOSE: The purpose of this document is to provide additional strategies for managing palms, including removal, strategic pruning, bi-annual patrols, transplantation, and engineering solutions.

- Note: any additional costs associated with transplantation, re-engineering, and/or line re-construction will be at the property owner's expense.

| ALTERNATIVE | CONSIDERATIONS |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Removal | <ul style="list-style-type: none"> • Is this an appropriate removal? Consider the following: <ul style="list-style-type: none"> ◦ Is palm positioned below the conductors? ◦ Will the tree be in violation before the next cycle? ◦ DBH and height ◦ Reliability & facility protection ◦ Is the tree protected under any municipal regulations? Is it a City tree? • Will replacement tree(s) facilitate successful removal negotiations with the customer? Vouchers may be provided at VPM discretion. • VPM may consider additional T&M for wood removal, in order to secure removal permission from reluctant customers. Use of 3rd party contractor list can be considered for wood removal if approved by VPM. Customer can provide dumpster for wood. • Do the land rights give PG&E the authority to remove the tree in question? |
| Prune | <ul style="list-style-type: none"> • To be used only for palms to the side that will grow past the lines. • Do not negotiate pruning prescriptions with the customer. • Determine whether previous clearance distance maintained compliance for at least one (1) trim cycle. • Increasing the radial clearance may not be the best way to maximize the time the tree will stay in compliance. Palms grow quickly in response to trimming. • Prescribe a side trim or slope cut, and make notes to cut upper fronds that will droop down into violation in the future. • For feather palms, consider removing partial fronds when side pruning to slow the downward movement of upper fronds. Palms maintain a certain number of fronds at any one time. As you remove living fronds, new frond growth is encouraged. Not removing the whole frond may actually provide a longer cycle before next trim is required. • Inspection during subsequent cycles, including bi-annual patrols, can help determine whether trimming strategies are maintaining compliance. If not, consider alternatives such as removal. |
| Work Tracking | <ul style="list-style-type: none"> • Utilize the Future Palm letter for customers with palms that will require removal in the future. • Palm letters by themselves do not ensure that one full year of clearance will be obtained. Individual palms or locations may fall through the cracks. For palms that will not hold clearance for a full year with normal pruning, the refusal process should be used. • The refusal process is used to track unmanageable palms when the customer refuses removal. Although PG&E may or may not have the right to remove or kill the palm, PG&E does have the right and responsibility to obtain one-year' worth of clearance even if that clearance removes the heart of the palm and kills it. |

Distribution Routine Patrol Procedure (DRPP)

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|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transplanting & Palm Brokers | <ul style="list-style-type: none"> • Palms may be valuable enough to justify transplantation by the customer. • Customer should contact palm broker and coordinate work. • This alternative should be initiated at least 2-3 years before the tree enters within 10' of the high voltage lines. Palm brokers may not be interested in trees that have been pruned due to concerns about disease or appearance. • Line-kills may be appropriate, at property owner expense, during transplantation to ensure safety. • Always prescribe necessary pruning to maintain compliance until the next cycle, even if the customer says they will move the palm. |
| Engineering & Line Construction Solutions <small>April 2007</small> | <ul style="list-style-type: none"> • Do not discuss engineering alternatives with the customer (VPM/Forester only). • The best opportunity to address the adverse effects of trees on distribution lines is at the time of initial design. Notify VPM/Forester of potential infrastructure alterations including new line construction, upgrades to the electrical system, and road widening or relocation projects. • At the customer's request and expense, the electric construction department may consider overhead construction alternatives including: <ul style="list-style-type: none"> ◦ Alley or wing arm construction ◦ Compact construction and/or changing pin spacing ◦ Aerial cable ◦ Raychem wire covering • Always prescribe necessary trimming to maintain compliance until the next cycle, even if the customer says they will pursue a construction change. |

Distribution Routine Patrol Procedure (DRPP)

Appendix D: Orchard Best Management Practices

ORCHARD BEST MANAGEMENT PRACTICES

PIs and TCs are expected to follow Vegetation Management Best Management Practices, as follows:

GENERAL SAFETY

BMP 1: VM contractors will follow all Vegetation Management BMPs for environmental laws and procedures.

<S:\Orchard - Distribution Project\VM BMPs>

BMP 2: VM contractors will review and comply with all pesticide safety rules and regulations.

Do not enter an orchard if chemicals are suspected as a result of pesticide treatment; required spray re-entry signage may not be posted. When in doubt, verify with grower / orchard manager that orchard is safe to access.

<S:\Orchard - Distribution Project\Safety>

BMP 3: VM contractors must access orchards by using pavement or designated roads, and comply with seasonal entry restrictions. If vehicle access between rows is required, permission from orchard manager must be obtained. Vehicle speed limit (generally 10 mph) must be followed.

BMP 4: VM contractors will not enter during restricted entry intervals such as harvest, flooding or application of pesticides. For emergency tree work, immediately contact local PI supervisor (SCUF), VPM and notify orchard owner.

SCHEDULE

BMP 5: VM contractors will prescribe tree work according to the Distribution Patrol Standard (DPS) to ensure regulatory compliance. Any trees that require increased clearance, or removal, since they can't be managed on a one year cycle, must be discussed with the orchard owner and recorded in vegetation management database (VMD). PIs must tailboard increased clearance locations with TCs prior to tree work.

<S:\Orchard - Distribution Project\5 Minute Meeting Annual Clearances>

BMP 6: Whenever possible, VM Contractors will schedule distribution and transmission orchard-work at the same property, or corridor, and coordinate schedules using the project management database, seasonal restrictions and harvest schedule.

DATABASE MANAGEMENT

BMP 7: VM contractors will use "Orchard Projects" defined in PMD as a separate segment from the non-orchard patrol, identified by Circuit name as the Project name, and using Orchard as the descriptor. The PMD Standardization Guidelines must be utilized for specific guidance.

Note: Non-Orchard trees can be listed in an orchard project with "Private" as owner.

BMP 8: Pre-inspection contractor will maintain a list of Orchard Owners that will be updated / edited / corrected frequently so that accurate information can be used by TCs. The grower list for the transmission orchard

Distribution Routine Patrol Procedure (DRPP)

program will include distribution orchard owners if distribution lines exist on the same property. Pre-patrol notification letters must be mailed in advance of each scheduled quarter, and mailing coordinated with transmission orchard program pre-patrol letters to avoid duplications. To the extent possible, one letter should be sent when a property / grower has both transmission and distribution. PI transmission will send these letters - one for transmission only and one for distribution and transmission; distribution-only will be handled by PI distribution.

BMP 9: PI contractors will verify the accuracy of contact information and update the database as required. For obtaining current orchard owner phone numbers, PIs have access to a variety of databases including CCNB /S AP information provided by PG&E clerk

BMP 10: SCUF will provide orchard PIs with Pre-Planning reports for orchard projects from back office PMD, and discuss quality, schedule and compliance goals

PRE-WORK REVIEWS / BENCHMARKING

BMP 11: VM contractors will perform customer call outs utilizing the customer notification system, specific to orchard projects. Call out schedules must be coordinated with transmission orchard program to avoid duplications.

BMP 12: Locations: Identify orchards that have discussion topics (i.e., clearance, different species, older mature trees, new plantings, etc.). Contractors will work with the orchard owner to ensure coordination. Ensure benchmark locations are safe, away from main thoroughfares, and with plenty of parking.

Orchard owner notifications: Benchmarks should include the importance of proper notifications to all orchard owners / managers. They should be conducted pre-and post-harvest to help educate inspectors on the effects of leaf and nut loading, or changing tree-conductor clearances from dormant season to time of harvest.

VM contractors must conduct representative benchmarks prior to annual tree maintenance.

TALKING POINTS

BMP 13: VM contractors will review talking points when communicating with orchard owners to deliver a consistent message.

S:\Orchard - Distribution Project\Talking Points

Bulletins are intended to communicate the following:

- An immediate change in how business is done
- Information about a safety, health or environmental incident or issue and resulting required actions
- Information about a new mandatory compliance requirement

A clarification of a previous instruction to communicate why the document is being

EXHIBIT H-10

Evaluation of Tree Growth Rates Bulletin

SUMMARY

This bulletin provides guidance for tree growth rates and the necessary considerations when performing an evaluation of a tree that has the potential to impact electric distribution facilities.

Level of Use: Informational Use

AFFECTED DOCUMENT

[Utility Procedure TD-7102P-02, "Vegetation Management Distribution Routine Patrol Procedure"](#)

TARGET AUDIENCE

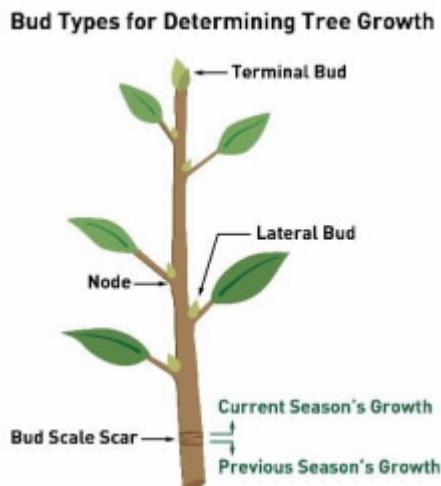
Vegetation management (VM) operational employees and contractors involved in pre-inspection (PI) activities.

WHAT YOU NEED TO KNOW

1 How to Approximate Last Season Growth

- 1.1 On the tree branch (SEE Figure 1, "Bud Types for Determining Tree Growth"),
 1. LOCATE the terminal bud (i.e. end of the branch).
 2. LOCATE the bud scale scar.
 3. DETERMINE the distance from the terminal bud to the bud scale scar. This is the approximate tree growth from last season.

Figure 1 Bud Types for Determining Tree Growth



Evaluation of Tree Growth Rates Bulletin

NOTE

- Multiple years of bud scale scars can be visible on a single branch. This can help determine the changes in growth amount year over year.
- Leaves or small branches can grow at the node.

2 How to Determine Estimated Average Growth



CAUTION

Estimated values are not equal nor interchangeable when determining tree growth from the side versus tree growth from the top. When determining an average, evaluate branches from the same area of the tree.

- 2.1 REPEAT [Step 1](#) on multiple branches of the same tree that are closest to the conductor.
- 2.2 CALCULATE the estimated average growth by adding the distances estimated and dividing by the number of distances collected.
 - Example: $(24\text{-in} + 12\text{-in} + 18\text{-in}) / 3 = 18\text{-in}$ of estimated average growth

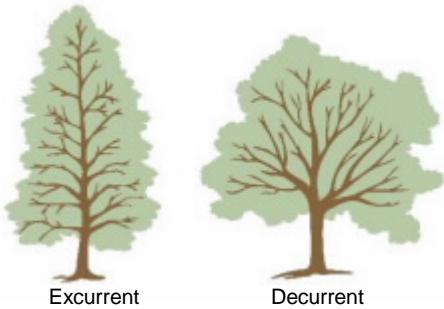
3 Additional Considerations for Evaluation of Growth

- 3.1 During the evaluation of tree growth, consider the following:
 - Tree pruning before growth season.
 - The natural growth structure of the tree (SEE Figure 2, "Natural Growth Structure of a Tree).
 - Excurrent structures focus growth energy upwards and do not respond to side trims.
 - Decurrent structures focus growth energy both upwards and outwards and will respond to side pruning by pushing out rapid regrowth.

Evaluation of Tree Growth Rates Bulletin

3.1 (continued)

Figure 2 Natural Growth Structure of a Tree



3.2 Use Table 1, "Tree Growth Modifiers" to conservatively modify the estimated average growth determined in [Section 2](#).

- Additional influences may need to be considered

Table 1 Growth Modifiers

| Indicator | More Growth | Less Growth |
|-------------------------------------------------------|-------------|-------------|
| Wet winter | x | |
| Dry winter | | x |
| Water is readily available (nearby lawn, creek, etc.) | x | |
| Heavy fruiting (pine cones, berries, etc.) | | x |
| Heavy competition for resources (densely planted) | | x |
| The tree is showing reactionary growth | x | |
| The tree is showing natural growth | | x |
| Unnatural coloring of leaves | | x |
| Observed dieback | | x |

3.3 Lastly, perform a logic check. Does the estimated average growth determined in [Section 2](#) mimic the growth of other similar species of trees in the surrounding area?

DOCUMENT APPROVER

[REDACTED] Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervisor, Vegetation Management

INCLUSION PLAN

This information will be incorporated in the next revision of [Utility Procedure TD-7102P-02, "Vegetation Management Distribution Routine Patrol Procedure."](#)

EXHIBIT H-11



Best Management Practices

Mejores Prácticas de Gestión

Manejo de la vegetación
cercana a líneas eléctricas
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03/14/2019, Rev: 0

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Guidance Document References:

[TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

Level of Use:

- Information
- Reference
- Continuous

| ENGLISH | SPANISH |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>During the performance of Vegetation Management (VM) activities the following Best Management Practices (BMPs) must be implemented where practicable. BMPs are considered practicable where physically possible and not conflicting with other regulatory obligations or safety considerations (GO 95 Rule 35 and Public Resource Codes 4292 and 4293) or emergency response situations. These BMPs are designed to ensure that PG&E VM activities are performed in an environmentally sensitive manner to minimize environmental impacts.</p> | <p>Durante la ejecución de actividades relativas al Manejo de Vegetación (Vegetation Management, VM, por sus siglas en inglés) las siguientes Mejores Prácticas de Gestión (Best Management Practices, BPM, por sus siglas en inglés) deberán ser implementadas donde sea factible. Las BMPs son consideradas factibles donde resulte físicamente posible realizarlas y donde no exista conflicto con otras regulaciones o consideraciones relativas a la seguridad (GO 95 Rule 35 and Public Resource Codes 4292 and 4293) o con situaciones de respuesta a emergencias. Estas BMPs están diseñadas para asegurar que las actividades de manejo de vegetación por parte de PG&E sean ejecutadas respetando el medio ambiente de manera de minimizar el impacto ambiental.</p> |



Best Management Practices

Mejores Prácticas de Gestión

General BMPs for All VM Activities

BMPs Generales Para Actividades de VM

| BMP # | ENGLISH | SPANISH |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 1 | VM employees and contractors must conduct ongoing training of environmental laws and procedures. VM employees and Contractors performing vegetation management activities must comply with these laws and procedures to minimize or avoid effects on natural resources during work activities. | Los empleados y contratistas dedicados al manejo de la vegetación deben recibir capacitación continua sobre las leyes y los procedimientos relativos al medio ambiente. Las actividades de estos empleados y contratistas deben ajustarse a estas leyes y procedimientos para que durante la ejecución de los trabajos se minimicen o se eviten efectos sobre los recursos naturales. |
| BMP 2 | On federal, state, local and tribal agency land the land managers should be notified of pending work as far in advance as possible. | Ya sea en tierras federales, estatales, locales o de agencias tribales, los responsables de la administración de las tierras deben ser notificados con la máxima anticipación posible. |
| BMP 3 | Roads, erosion control measures, fences, and structures damaged as a result of vegetation management operations must be repaired and reported to the work group supervisor and the VM PG&E Representative. Gates must be left as they are found. | Los daños en caminos, elementos para control de erosión, cercos y estructuras ocasionados durante operaciones de manejo de la vegetación, deben ser reparados y reportados al supervisor del grupo de trabajo y al Representante de PG&E a cargo de VM. Los portones deben quedar tal como se encontraron. |
| BMP 4 | Vehicles and equipment must use pavement, existing roads, and previously disturbed areas to the extent practicable. | En la medida de lo posible, los vehículos y equipos deben circular por el pavimento, caminos existentes y áreas que han sido utilizadas con anterioridad. |
| BMP 5 | Motorized equipment must comply with Air Resources Board permitting requirements. | Los equipos motorizados deben cumplir con los requerimientos del Air Resources Board. |



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General BMPs for All VM Activities

BMPs Generales Para Actividades de VM

| BMP # | ENGLISH | SPANISH |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 6 | <p>Vehicle idling, noise, and odor must be minimized to the extent practicable when working near residences, public buildings, or commercial buildings. Within 100 feet of school facilities work vehicle must not stand idling for more than five minutes, unless necessary for work purposes. Diesel-fueled work vehicles must not stand idling for more than five minutes at any location, unless necessary for work purposes.</p> | <p>En los vehículos operando con el motor al ralentí, los ruidos y los olores deben minimizarse al punto de lo prácticamente posible cuando estén trabajando cerca de áreas residenciales, de edificios públicos y de edificios comerciales. Dentro de un radio de cien pies de cercanía a escuelas, los vehículos no deben permanecer con el motor al ralentí por más de cinco minutos, salvo que sea necesario por cuestiones relativas al trabajo realizado. Los vehículos con motores diesel no deben permanecer al ralentí por más de cinco minutos en ningún lugar, salvo que sea necesario por cuestiones operativas.</p> |
| BMP 7 | <p>Contractors must have the ability to communicate quickly with their supervisor and/or PG&E by having a working cell phone or radio on the job site at all times, or by identifying the closest area of cell phone reception or closest public phone and familiarizing all employees with that location.</p> | <p>Los contratistas deben tener la posibilidad de poder comunicarse rápidamente con sus supervisores y/o con PG&E teniendo en el área de trabajo y en todo momento, un teléfono celular operativo o una radio; también deben identificar el área más cercana con buena recepción para teléfonos celulares o el teléfono público más próximo, y deben familiarizar a los empleados con dichas ubicaciones.</p> |



Best Management Practices

Mejores Prácticas de Gestión

Water Quality/Sediment Control BMPs

BMPs Relativas a la Calidad del Agua y al Control de Sedimentos

| BMP # | ENGLISH | SPANISH |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 8 | Vehicles and heavy equipment must be refueled at least 100 feet away from riparian areas. Handheld tools must be refueled outside of riparian areas. The fueling operator must stay with the fueling operation at all times. Do not top off tanks. | Los vehículos y equipos pesados deben ser reabastecidos de combustible a una distancia mayor de 100 pies de áreas ribereñas. Las herramientas de mano deben ser reabastecidas de combustible fuera de áreas ribereñas. El operador de reabastecimiento de combustible debe permanecer en el área de reabastecimiento en forma permanente. No llene a tope los tanques de combustible. |
| BMP 9 | Petroleum and herbicide spill containment and cleanup materials must be available at the job site. Spills must be immediately cleaned up and contaminated materials disposed of properly. Spills greater than 8 oz. on soil or spills that create sheen on the water must be reported immediately to the supervisor and the VM PG&E Representative for appropriate management. | Materiales de limpieza específicos para derrames de petróleo y de herbicidas deben estar disponibles en el área de trabajo. Los derrames deben limpiarse en forma inmediata y los materiales contaminados deben ser desechados de la forma apropiada. Los derrames de más de 8 onzas sobre suelos o los derrames sobre agua que formen una superficie brillosa, deben ser reportados inmediatamente al supervisor y al representante de PG&E encargado de VM, para que los mismos sean tratados apropiadamente. |
| BMP 10 | Immediately after vegetation management activities, if the amount of contiguous, bare soil exposed in one location exceeds 0.1 Acres, erosion control measures must be implemented. These measures may include lop & scatter, broadcasting chipped material or compliance with other PG&E Erosion control measures. | Si inmediatamente después de un trabajo de control de vegetación, la cantidad contigua de suelo expuesto superase los 0.1 acres, se deben implementar medidas de control de erosión. Estas medidas podrían incluir "lop & scatter" (poda selectiva y esparsión de residuos), dispersión de material astillado o alguna otra medida de control de erosión aprobada por PG&E. |



Best Management Practices

Mejores Prácticas de Gestión

Water Quality/Sediment Control BMPs

BMPs Relativas a la Calidad del Agua y al Control de Sedimentos

| BMP # | ENGLISH | SPANISH |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 11 | Vehicle use within riparian areas is limited to existing roads and dry crossings, and they must be checked and maintained daily to prevent leaks of materials that, if introduced to water, could be harmful to aquatic life. | El uso de vehículos dentro de áreas ribereñas está limitado a caminos existentes y cruces secos; éstos deben ser controlados y mantenidos diariamente para prevenir eventuales pérdidas de materiales en el agua, que podrían causar riesgo a la vida acuática. |
| BMP 12 | Cleared or pruned vegetation and woody debris (including chips) must be disposed of in a manner to ensure that it does not enter surface water or a watercourse. All cleared vegetation and woody debris (including chips) must be removed from surface water or watercourses, and placed or secured where it cannot re-enter the watercourse. | Los restos de vegetación podada y los restos de madera (incluyendo trozos pequeños) deben ser eliminados de manera que no lleguen a la superficie del agua o que no entren en un curso de agua. Todo resto de vegetación podada y de madera (incluyendo trozos pequeños) debe ser removida de la superficie del agua o de cursos de agua y se los debe ubicar o confinar en lugares seguros donde no tengan la oportunidad de volver a entrar al curso de agua. |



Best Management Practices

Mejores Prácticas de Gestión

Environmental/Biological BMPs

BMPs Relativas al Medio Ambiente y a la Biología

| BMP # | ENGLISH | SPANISH |
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| BMP 13 | Vehicles should not exceed 15 mph on un-surfaced roads such as agricultural field roads and transmission right-of-way (ROW) access roads. | Los vehículos no deben exceder las 15 millas por hora en caminos no asfaltados tales como caminos en campos de agricultura y caminos con derecho a paso de acceso a líneas de transmisión (right-of-way, ROW por sus siglas en inglés). |
| BMP 14 | Vehicles and heavy equipment must not be operated off roads within 25 feet of the edge of a vernal pool unless a biologist or natural resource professional evaluates and prescribes site specific AMMs. | Los vehículos y equipos pesados no deben ser operados fuera de rutas dentro de un radio de 25 pies del borde de un charco vernal, a menos que un biólogo o un profesional en recursos naturales evalúe y prescriba AMMs específicas para el lugar. |
| BMP 15 | VELB: VM activities in Valley Elderberry Longhorn Beetle (VELB) habitat must follow PG&E VELB Utility Standard ENV-7001S and VM VELB Procedures. | VELB: las actividades relativas al manejo de la vegetación en el hábitat del escarabajo de cuerno largo del Valley Elderberry (Valley Elderberry Longhorn Beetle ,VELB, por sus siglas en inglés) deben seguir los estándares de PG&E VELB Utility Standard ENV-7001S y los procedimientos VM VELB. |
| BMP 16 | Migratory Birds: VM activities must follow the VM Migratory Bird Flowchart, to comply with the Migratory Bird Treaty Act. | Pájaros Migratorios: las actividades relativas al manejo de la vegetación deben seguir el Diagrama de Flujo VM para Aves Migratorias (VM Migratory Bird Flowchart), para cumplir con el Acta de Tratamiento de Aves Migratorias. |
| BMP 17 | Sudden Oak Death: VM activities in counties subject to the Sudden Oak Death quarantine must follow VM Sudden Oak Death Protocols. | Muerte Súbita del Roble: las actividades relativas al manejo de la vegetación en condados sujetos a cuarentena por Muerte Súbita del Roble deben seguir los Protocolos VM para Muerte Súbita del Roble (VM Sudden Oak Death Protocols). |



Best Management Practices

Mejores Prácticas de Gestión

Environmental/Biological BMPs

BMPs Relativas al Medio Ambiente y a la Biología

| BMP # | ENGLISH | SPANISH |
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| BMP 18 | Environmental screening for mowing locations, fee strip weed abatement, and for electric transmission ROW reclamation work must be conducted by the VM environmental group prior to work. | Los controles ambientales para zonas de segado, de control de maleza y para trabajos de restauración en zonas con derecho a paso en líneas de transmisión eléctricas (ROW), deben ser realizados por el grupo ambiental VM antes de iniciar el trabajo. |
| BMP 19 | VM must verify that the environmental screening process for capital and other non-VM work was conducted by the work owner prior to VM starting vegetation management activities. VM personnel and contractors must implement the environmental protection measures prescribed for the work. | Antes de comenzar tareas de manejo de vegetación, VM debe verificar que el proceso de control ambiental para trabajos primordiales y otros no relacionados al control de vegetación, fue realizado por el dueño de la obra. El personal de VM y los contratistas deben implementar las medidas de protección ambiental recomendadas para la obra. |



Best Management Practices

Mejores Prácticas de Gestión

Environmental/Biological BMPs

BMPs Relativas al Medio Ambiente y a la Biología

| BMP # | ENGLISH | SPANISH |
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| BMP 20 | <p>Cultural Resources:</p> <p><i>Items identified through Patrols/Screenings:</i> When previously identified cultural resources are found (i.e., old bottles, cans, buildings), they must be left in place and undisturbed. If it is necessary to move or disturb them to complete the work, or if human remains are found, stop work and contact the VM PG&E Representative.</p> <p><i>Unanticipated Discovery:</i> If any new cultural resources (e.g., structure features, bone, shell, artifacts, or architectural remains) are encountered and site disturbance cannot be avoided during work activities, or if human remains are suspected:</p> <ul style="list-style-type: none"> • Stop all work within 100 feet of the discovery • Notify the VM PG&E representative who will contact the Cultural Resource Specialist • Secure location, but do not touch or remove remains and associated artifacts; • Do not remove associated spoils or pick through them; • Note the location and document all calls and events; • Keep the location confidential. | <p>Recursos Culturales:</p> <p><i>Elementos identificados a través de Patrullajes/Controles:</i> cuando se encuentren recursos culturales previamente identificados (por ejemplo botellas viejas, latas, edificaciones), se deben dejar en el lugar tal como se los encontraron. Si es necesario moverlos o alterarlos para completar el trabajo, o si restos humanos son encontrados, detenga el trabajo y contacte un Representante VM de PG&E.</p> <p><i>Descubrimiento No Anticipado:</i> Si cualquier recurso cultural nuevo (por ejemplo restos de estructuras, huesos, conchas, artefactos o ruinas arquitectónicas) son descubiertos y la alteración del lugar no puede ser evitada durante el trabajo o ante la sospecha de presencia de restos humanos:</p> <ul style="list-style-type: none"> • Detenga todo trabajo dentro de un radio de 100 pies del descubrimiento • Notifique al representante VM de PG&E quien contactará al especialista en recursos culturales • Proteja el área, pero no toque o remueva los restos o artefactos asociados; • No remueva el hallazgo ni lo revise; • Anote la ubicación y documente todas las llamadas y eventos; • Mantenga la ubicación confidencial. |



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Mejores Prácticas de Gestión

Environmental/Biological BMPs

BMPs Relativas al Medio Ambiente y a la Biología

| BMP # | ENGLISH | SPANISH |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 21 | If a protected wildlife species is killed or injured as a result of current VM activities, the incident must be reported immediately to a supervisor and the VM PG&E Representative for appropriate management. | Si alguna especie protegida de vida salvaje es muerta o herida como resultado de alguna actividad VM, el incidente debe ser reportado en forma inmediata a un supervisor y al Representante VM de PG&E para que sea manejado apropiadamente. |
| BMP 22 | Disturbance or removal of non-target vegetation within a work area should not exceed the minimum necessary to complete operations, subject to other public, health and safety directives governing the safe operations and maintenance of electric and gas facilities. | La perturbación o remoción de vegetación que no sea el objetivo de trabajo debe ser la mínima necesaria que permita completar las operaciones. Debe estar sujeta a directivas públicas, de salud y de seguridad que ríjan operaciones y mantenimiento de plantas eléctricas y de gas. |
| BMP 23 | During designated Fire Season motorized equipment must have federal or state approved spark arrestors; all vehicles must be equipped with firefighting tools as appropriate and in accordance with all applicable laws, rules, regulations, orders, and ordinances. When the fire adjective rating is Very High or Extreme no vehicular travel is permitted off cleared roads except in case of emergency. | Durante la Temporada de Incendios los equipos motorizados deben contar con sistemas de contención de chispas aprobados por el estado o por el gobierno federal; todos los vehículos deben contar con equipos extinguidores de fuego para la situación apropiada, debiendo cumplir los mismos con todas las leyes, regulaciones, reglas, órdenes y ordenanzas que les corresponda aplicar. Cuando el riesgo de incendio está en el nivel Muy Alto o Extremo, no se permite ninguna circulación vehicular fuera de los caminos habilitados excepto en casos de emergencia. |



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Mejores Prácticas de Gestión

Fire BMPs

BMPs Relativas a Incendios

| BMP # | ENGLISH | SPANISH |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 24 | <p>During designated Fire Season the contractor must check and follow the requirements of the daily Project Activity Level (PAL) when working on USFS or other required properties, or the Fire Adjective Index rating in hazardous fire areas and SRAs. These are measures of fire weather conditions and may restrict activities otherwise permitted.</p> | <p>Durante la Temporada de Incendios el contratista debe verificar y seguir los requerimientos del Nivel diario de Actividad del Proyecto (Project Activity Level, PAL, por sus siglas en inglés) cuando esté trabajando en USFS u otras propiedades o debe seguir el Índice de Calificación de Riesgo de Incendio en áreas de alto riesgo y áreas de responsabilidad del estado (SRA, por sus siglas en inglés). Estas son medidas de condiciones de clima relativas a riesgo de incendios que podrían restringir actividades que normalmente serían permitidas.</p> |
| BMP 25 | <p>During designated Fire Season in grass and wildland areas:</p> <ul style="list-style-type: none"> • Smoking is not allowed while walking, working, or operating light or heavy equipment. • Smoking is allowed in a barren area, or within an area cleared to mineral soil at least three feet in diameter. <p>During Fire Adjective Index ratings of Very High or Extreme smoking is not allowed at any time in grass and wildland areas.</p> | <p>Durante la Temporada de Incendios en áreas con pasto y terrenos vírgenes:</p> <ul style="list-style-type: none"> • No está permitido fumar mientras se camina, trabaja u opera equipo liviano o pesado. • Fumar está permitido en áreas yermas o dentro de un área de por lo menos 3 pies de diámetro donde se ha removido vegetación hasta dejar solo suelo mineral. <p>Cuando el Índice de Calificación de Riesgo de Incendios es Muy Alto o Extremo no está permitido fumar en ningún momento en áreas con pasto o en terrenos vírgenes.</p> |



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Fire BMPs

BMPs Relativas a Incendios

| BMP # | ENGLISH | SPANISH |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 26 | Hunting, firearms, portable stoves, open fires (such as barbecues) not required by the VM activity, and pets (except for safety in remote locations) are prohibited in VM work activity sites. All trash, food items and human-generated debris must be properly contained and/or removed from the site. | En áreas de trabajo de manejo de la vegetación, está prohibido cazar, usar armas de fuego, utilizar cocinas portátiles, realizar fuegos abiertos si no lo requiriese la actividad VM (barbacoas por ejemplo). También están prohibidos los animales domésticos, excepto que sean requeridos por razones de seguridad en ubicaciones remotas. |
| BMP 27 | Woody debris created by chipping, lop and scatter, or brush mowing operations must be left at an average depth of less than 18 inches from the ground surface unless otherwise specified in an easement or land owner agreement. | Los restos de madera originados por triturado, por "lop & scatter" (poda selectiva y esparsión de residuos), o por operaciones de segado de arbustos deben ser dejados a una profundidad promedio de menos de 18 pulgadas de la superficie del suelo, excepto que se especifique de otra forma a través de una servidumbre o de un acuerdo con el dueño de la propiedad. |



Best Management Practices

Mejores Prácticas de Gestión

Herbicide BMPs

BMPs Relativas a Herbicidas

| BMP # | ENGLISH | SPANISH |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 28 | A Licensed Pest Control Advisor must write prescriptions for all herbicide and tree growth regulator applications. Contractors must use a Qualified Applicator when applying herbicides and tree growth regulators for VM. | Todas las aplicaciones de herbicidas y reguladores del crecimiento de árboles deben ser prescriptas por un asesor Licenciado en Control de Pests. Los contratistas deben usar un Aplicador Calificado cuando se apliquen herbicidas y reguladores de crecimientos de árboles, como parte de actividades VM. |
| BMP 29 | Nozzle tip, pressure and sprayer configuration should be such to produce a coarser droplet to minimize drift. | La punta de la boquilla, la configuración del rociador y su presión deben ser tal que produzcan gotas de un tamaño suficientemente grande que minimicen el rocío a la deriva. |
| BMP 30 | Pesticides must not be transported in the same compartment with persons, food, or feed. Pesticide containers must be secured to the vehicle during transportation in a manner that will prevent spilling into or off the vehicle. | Los pesticidas no deben ser transportados en el mismo compartimento que personas, comida o alimento para ganado. Durante su transporte, los contenedores de pesticidas deben estar firmemente sujetos al vehículo para prevenir derrames dentro o fuera del vehículo. |
| BMP 31 | Selective application techniques should be used for VM ROW maintenance operations wherever practicable so that desirable vegetation is not adversely affected. | Cuando sea posible, técnicas de aplicación selectivas deberían ser utilizadas en operaciones de mantenimiento VM en caminos con derecho a paso (ROW) de forma tal que la vegetación deseada no sea adversamente afectada. |
| BMP 32 | The contractor must have a written training program for employees who handle pesticides. The written program must describe the materials and the information that will be provided and used to train the employees. | EL contratista debe tener un programa de entrenamiento escrito para empleados acerca de cómo manipular pesticidas. El programa escrito debe describir los materiales y la información que será provista y utilizada para entrenar a los empleados. |



Best Management Practices

Mejores Prácticas de Gestión

Herbicide BMPs

BMPs Relativas a Herbicidas

| BMP # | ENGLISH | SPANISH |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 33 | Training must be completed before an employee is allowed to handle any pesticide, and must be continually updated to cover any new pesticides that will be handled. Training must be repeated at least annually thereafter. | El entrenamiento debe ser finalizado antes de que un empleado sea autorizado a la manipulación de pesticidas y se debe actualizar en forma continua para cubrir cualquier pesticida nuevo a ser utilizado. Se debe repetir el entrenamiento al menos una vez al año. |
| BMP 34 | These special precautions must be observed during periods of inclement weather: <ul style="list-style-type: none"> • Applications must not be made in, immediately prior to, or immediately following rain when runoff could be expected. • Applications must not be made when wind and/or fog conditions have the potential to cause drift. • Basal bark applications must not be made when stems are wet with rain, snow or ice. | Las siguientes precauciones especiales deben ser tenidas en cuenta durante los periodos de clima riguroso: <ul style="list-style-type: none"> • Las aplicaciones no deben realizarse durante lluvias, o inmediatamente antes o inmediatamente después de las mismas, cuando escorrentías pueden esperarse. • Las aplicaciones no deben realizarse si las condiciones de viento o de niebla pudieran causar que el rocío quede a la deriva. • Las aplicaciones de corteza basal no deben realizarse cuando los tallos están húmedos por lluvia, nieve o hielo. |
| BMP 35 | Herbicide Buffer Width from Stream, Wetland, or Other Sensitive Habitat Ancho de la zona de protección desde arroyos, pantanos u otros hábitats sensibles | Herbicide designation or usage Uso o designación del herbicida |
| | No buffer requirement No se requiere zona de protección | Approved for aquatic use Aprobado para uso acuático |
| | 25 feet 25 pies | Not approved for aquatic use No aprobado para uso acuático |
| | 200 feet 200 pies | Mixing, Loading, Cleaning Mezclado, Carga, Limpieza |



Best Management Practices

Mejores Prácticas de Gestión

Mechanical Clearing Operations BMPs

BMPs Relativas a Operaciones de Remoción Mecánica

| BMP # | ENGLISH | SPANISH |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 36 | Mechanical clearing equipment must not be used to clear vegetation within 10 feet of towers, poles or guy wires. Only handheld tools such as chainsaws and weed eaters may be used in these areas. | No se debe usar equipos mecánicos de remoción de vegetación dentro de un radio de 10 pies de torres, de postes o de cables de amarre. Solo herramientas de mano como sierras a cadena y cortador de malezas, pueden ser utilizadas en estas áreas. |
| BMP 37 | Contractor must flag guy wires 200 feet ahead of working an area, using bright colored flagging, and a minimum of three flags per wire. | El contratista debe señalizar los cables de amarre a 200 pies por delante del área de trabajo, usando señales de colores vivos, con un mínimo de tres señales por cable. |
| BMP 38 | During fire season contractor must have a water source containing a minimum of 300 gallons of water and 250 feet of 1-inch hose on site at all times during operation. The water source must either be self-propelled or always attached to a vehicle capable of moving it to where it is needed. Where access/terrain allows, contractor's water source must always be within 500 feet of the mowing/cutting operation. Excess water must be disposed of in accordance with all laws and regulations. | Durante la temporada de incendio el contratista debe tener en el lugar de trabajo y en todo momento, una reserva de agua de por lo menos 300 galones y una manguera de 250 pies de longitud por 1 pulgada de diámetro. La fuente de agua debe poseer motorización propia o estar siempre acoplada a un vehículo capaz de trasladarse a donde sea necesario. Donde el acceso/terreno lo permita, la fuente de agua del contratista debe estar siempre dentro de un radio de 500 pies de la operación de siega/tala. El exceso de agua debe ser desecharlo de acuerdo a todas las leyes y regulaciones vigentes. |
| BMP 39 | Mechanical clearing equipment must have at least one 5 lb. or more Class ABC fire extinguisher with current inspection tag mounted in the cab and accessible by the operator. | Los equipos de remoción mecánicos deben tener al menos un extintor de fuego Clase ABC de 5 libras o más con su correspondiente tarjeta de inspección vigente, y debe estar montado en la cabina de forma accesible al operador. |



Best Management Practices

Mejores Prácticas de Gestión

Mechanical Clearing Operations BMPs

BMPs Relativas a Operaciones de Remoción Mecánica

| BMP # | ENGLISH | SPANISH |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 40 | <p>During fire season or High Fire Hazard levels contractor must stay on site for a minimum of ½ hour after mechanical clearing operations end for the day to ensure fire safety. During extreme fire levels an additional support person must be dedicated to follow the equipment with a water type back pump and fire line tool. During extreme fire levels mechanical clearing will be limited to the hours of 5:00 AM to 12:30 PM.</p> | <p>Durante la temporada de incendios o de niveles de Peligro Alto de Incendio, el contratista debe permanecer en el lugar de trabajo por lo menos durante media hora después de haber efectuado la última operación de remoción mecánica del día para asegurarse que no existan riesgos de incendio. Cuando se alcancen niveles extremos de riesgo de incendio una persona de soporte adicional debe ser asignada para que siga a los equipos con una de bomba de agua tipo mochila y con herramientas para contención de fuego. Durante niveles de riesgo de incendio extremos, las operaciones de remoción deben limitarse al horario de 5:00 AM a 12:30 PM.</p> |
| BMP 41 | <p>Watercourse protection zones must be marked with brightly colored flagging prior to the start of any mechanical clearing or timber operation. Water classes are defined by the California Forest Practice Rules: 14 CCR 916.5. The following watercourse protection zone widths must be maintained at all times, except on existing roadways:</p> <ul style="list-style-type: none"> • Class I & II watercourses with a slope < 30%---No heavy equip. within 50' • Class I & II watercourses with a slope > 30%---No heavy equip. within 75' • Class III & IV watercourse---No heavy equip. within 25' <p>Protection zones may be increased in areas with steep slopes or highly erodible soils.</p> | <p>Las zonas de protección de cursos de agua deben ser marcadas con señales de colores vivos previo al comienzo de cualquier operación de remoción mecánica y de talado. Los cursos de agua están definidos por el reglamento 14 CCR 916.5 de las Prácticas Forestales de California. Se deberán mantener en todo momento las siguientes dimensiones de zona de protección a cursos de agua:</p> <ul style="list-style-type: none"> • Cursos de agua clase I y II con una pendiente <30%---Sin equipo pesado, dentro de 50 pies • Cursos de agua clase I y II con una pendiente >30%---in equipo pesado, dentro de 75 pies • Cursos de agua clase III y IV---Sin equipo pesado, dentro de 25 pies <p>Las zonas de protección deben ser incrementadas en áreas con pendientes mayores o con suelos altamente erosionables.</p> |

EXHIBIT H-12-1

Major Woody Stem Exemption

SUMMARY

This procedure provides the instructions necessary to identify, assess, and document Major Woody Stems (MWS) near high voltage conductors that may qualify for exemption, as well as instructions for mitigation when vegetation does not meet the qualifications for an MWS exemption.

General Order (G.O.) 95, Rule 35, and Public Resources Code (PRC) 4293 contain exemptions that allow healthy, mature trees that do not present a risk to public safety to remain closer to high voltage electric conductors than the Minimum Clearance Requirements for vegetation.

This procedure also outlines the steps necessary to perform quarterly and annual verifications to ensure the procedure is being followed as intended.

This procedure only applies to voltages less than 60kV.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management (VM) governance and support personnel

Vegetation management operations personnel

Vegetation management contractors

- Pre-inspection (PI)
- Tree crews (TC)
- Quality control (QC)

SAFETY

NA

BEFORE YOU START

1. Review the Definitions section of this document.

Major Woody Stem Exemption

TABLE OF CONTENTS

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| 3 Assessment of Previously Identified Major Woody Stems..... | 6 |
| 4 Inspector Verifies and Documents MWS Exemption | 6 |
| 5 Non-Exempt Mitigation / Abatement..... | 7 |
| 6 Verification and Training..... | 8 |
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PROCEDURE STEPS

NOTE

The flowchart in [Attachment 1, Major Woody Stems Exemption Process Flowchart](#) summarizes the steps described in Sections 1 through 4.

1 Qualifications for Exemption

1.1 IF PI identifies a tree or limb that is less than 4' from a high voltage conductor in State Responsibility Area (SRA), OR less than 18" from a high voltage conductor in Local Responsibility Area (LRA),

THEN PI should CONSIDER the following site conditions:

- Local weather
- Potential conductor sag or sway
- Structural soundness of the tree / limb
- Wind and snow loading potential
- Impacts of other branches and trees
- Soil conditions
- Direction of lean

Major Woody Stem Exemption

1.1 (continued)

1. IF tree or limb meets **all** of the following exemption criteria:

NOTE

This does **not** apply to trees with burn marks due to previous contact that have been mitigated.

- Wood is greater than 6" from high voltage conductors.
- There is no evidence of prior contact between any portion of the tree branches or trunk and the conductor, including abrasion and/or incidental contact.
- Tree has been established in its current location for at least 10 years.
- Tree trunk has a diameter at breast height (DBH) of at least 10".
- Tree or limb at the conductor level is at least 6" in diameter.
- Tree is not re-sprouting at conductor level during the time of inspection.
- Tree is not hazardous per [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure."](#)
- Tree is not easily climbable.

THEN tree is exempt AND PI must COMPLETE additional steps to RECORD MWS, as per Sections 2 or 3 and 4, below.

1.2 IF tree wire or Raychem exist,

NOTE

Weather proofing is not considered insulated wire covering and must be treated the same as bare wire.

AND the following conditions are met:

- Tree is **not** in contact with tree wire or Raychem.
- Tree wire or Raychem is intact AND no signs of damage or abrasion exist.

THEN tree is exempt AND PI must COMPLETE additional steps to RECORD MWS, as per Sections 2 or 3 and 4, below.

Major Woody Stem Exemption

- 1.3 IF high voltage conductors with insulated attachments to the tree (tree connects) are present,
AND the tree is of sound healthy wood,
THEN tree is exempt AND PI must COMPLETE additional steps to RECORD the tree connect,
per Sections 2 or 3 and 4, below.
- 1.4 IF dead or decadent branches are present,
THEN tree connect is non-exempt AND PI must FOLLOW [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#) AND COMPLETE steps to RECORD MWS per
Sections 2 or 3 and 5, below.
- 1.5 PI APPLIES standard MWS exemption criteria as described in 1.11, above, to high voltage
wires that are not attached to the tree.
- 1.6 IF tree / limb is considered for exemption as a result of new reconstruction,
THEN tree is non-exempt AND PI must COMPLETE steps to RECORD MWS per Sections 2
or 3 and 5, below.
- 1.7 IF tree has a history of requiring tree maintenance work,
OR is smaller than 24" DBH,
THEN PI should PRESCRIBE tree removal AND COMPLETE steps to RECORD MWS per
Sections 2 or 3 and 4, below.
- 1.8 IF tree / limb does **not** meet above qualifications for exemption,
THEN
 1. MWS is considered non-exempt.
 2. PI must RECORD the tree / limb as a non-exempt MWS, which requires mitigation as
described in Section 5. Non-Exempt Mitigation / Abatement, below.
- 1.9 WHENEVER the PI IDENTIFIES an MWS tree,
THEN the PI ENTERS accurate GPS coordinates into the location record AND the tree record
on the hand-held device. This step applies to Sections 1 through 5.

Major Woody Stem Exemption

2 Initial Identification of New Major Woody Stems

2.1 IF PI identifies a location where major wood is within 4' of a high voltage conductor,

THEN PI must DETERMINE whether tree / limb:

- Is in an LRA or SRA.
- Meets the criteria for a MWS exemption.
- Is between either 6" to 18" OR between 19" to 48" away from the high voltage conductor.
- Is due to construction, replacement, or maintenance of electrical facilities.

1. IF tree is in LRA AND MWS is between 19 – 48",

THEN

- a. MWS does **not** require an exemption.
- b. No MWS handheld entry or MWS form is needed.

2. IF MWS meets **all** qualifications for exemption,

THEN PI

- a. SELECTS an appropriate exempt handheld entry, based on the distance of MWS from conductor (see Appendix A, Insulated Tree Wire Conditions and [Attachment 2, "MWS Categories Table"](#)).
- b. IF the **Required Action by PI** column in the Major Woody Stem Categories Table in [Attachment 2, MWS Categories Table](#) states that an MWS form is required,

THEN ENTER documentation as described in Section 4, below.

3. IF MWS does **not** meet all of the exemption criteria,

THEN PI SELECTS an appropriate non-exempt handheld entry that requires mitigation (see Section 5. Non-Exempt Mitigation / Abatement, below).

2.2 PI ENTERS any routine compliance work prescriptions in the handheld record, as necessary.

1. IF tree does **not** require routine compliance work prescription,

THEN PI COMPLETES handheld record with Inventory Notification status.

Major Woody Stem Exemption

3 Assessment of Previously Identified Major Woody Stems

- 3.1 IF pre-loaded record in handheld includes information for a previously identified MWS,
THEN PI must VERIFY that the data is accurate.
- 3.2 IF MWS has been removed,
OR no longer requires exemption,
THEN PI must REMOVE MWS handheld entry from the record.
- 3.3 IF MWS condition has changed in a way that affects the exemption criteria,
THEN
 - 1. PI UPDATES the exempt handheld entry, based on the distance of MWS from conductor (see Appendix A, Insulated Tree Wire Conditions and [Attachment 2, "MWS Categories Table"](#)).
 - 2. A qualified inspector must PERFORM RE-ASSESSMENT by following the steps in Section 2. Initial Identification of New Major Woody Stems, above.
- 3.4 IF an exempt MWS needs routine compliance work for the current year,
THEN PI must ENTER required compliance work prescription in the handheld record.
- 3.5 IF tree / limb conditions remain the same as previously identified,
THEN PI must UPDATE handheld record with an Inventory Notification status.

4 Inspector Verifies and Documents MWS Exemption

NOTE

Only a qualified inspector can perform the initial assessment to determine whether an MWS meets the exemption criteria. However, annual reviews of previously documented MWS locations do **not** need to be completed by a qualified inspector.

- 4.1 IF an un-qualified inspector makes an initial assessment for a tree that has not already been documented as exempt, AND that tree / limb meets exemption criteria at time of patrol,
THEN the un-qualified inspector must COMPLETE steps per the [TD-7102P-05-JA01, "MWS Data Entry Job Aid."](#)
- 4.2 WHEN circuit patrol is complete,
THEN a qualified inspector must REVIEW and PERFORM field confirmation of all MWS trees identified by an un-qualified inspector within **30** days.

Major Woody Stem Exemption

- 4.3 IF tree / limb qualifies for an exemption,
 THEN qualified inspector must COMPLETE, SIGN, and DATE an MWS exemption form,
 AND PI must COMPLETE an e-form for all newly identified MWS.
- 4.4 IF MWS trees were previously identified and documented on a hard copy MWS exemption form by a qualified inspector,
 AND an un-qualified inspector creates an e-form for the tree,
 THEN PI must SAVE completed hard copy MWS exemption form in the active circuit file.
- 4.5 PI must UPDATE all MWS forms to the new e-form by **11/15/2019**, per this procedure.
- 4.6 WHEN the annual circuit patrol is complete,
 THEN the database management specialist (DMS) must VERIFY that all:
 - 1. MWS forms are on file.
 - 2. MWS forms have been signed by a qualified inspector.
 - 3. MWS database records have a current inspection date.

5 Non-Exempt Mitigation / Abatement

NOTE

All MWS trees categorized as non-exempt in the handheld automatically generate a record in the VM Issue Tracking System (ITS).

- 5.1 At the end of the circuit patrol, DMS must PROVIDE PI supervisor a list of non-exempt MWS locations by completing the DBM checklist, OR by PROVIDING a report per the [TD-7102P-05-JA01, "MWS Data Entry Job Aid."](#)
- 5.2 PI supervisor PERFORMS the following steps:
 - 1. REVIEWS list of non-exempt MWS locations.
 - 2. DEVELOPS list of suggested mitigation methods.
 - 3. SENDS list of mitigation methods to vegetation program manager (VPM) / senior vegetation program manager (SVPM) via email within 10 working days of circuit completion date.
 - 4. UPDATES the non-exempt ITS record per [TD-7102P-05-JA01, "MWS Data Entry Job Aid."](#)

Major Woody Stem Exemption

5.3 VPM / SVPM must VERIFY that newly created MWS categorized as Non-Exempt New Construction are in fact the result of construction changes.

1. IF mitigation of non-exempt MWS due to construction must be performed,
THEN when possible, work should be CHARGED as a non-VM expense.

5.4 VPM / SVPM must DECIDE on the most appropriate mitigation method for each non-exempt MWS, including:

- Trimming
- Removal of tree, scaffold branch, or limb
- Installing wire covering, including tree wire and Raychem
- Construction changes
- Tree-wrap (See [TD-7102P-05-JA02, "Tree Wrap Installation Job Aid."](#))

5.5 IF construction changes, Raychem installation, or tree wire installation is required,
THEN

1. PI COMPLETES an Electric Correction (EC) Tag.
2. VPM SUBMITS tag to M&C / PS&R.

5.6 Area VPM UPLOADS a copy of EC tag to the VM Back Office ITS record for tracking.

5.7 WHEN a non-exempt MWS tree is mitigated OR the work request is closed,
THEN DMS must ENSURE that one of the following actions is taken:

1. Database record for the tree is deleted.
2. Database record is edited to a non-MWS location.
3. Tree record is edited to an exempt MWS entry.

6 Verification and Training

6.1 PI contractor vendor must PROVIDE training to contract employees during new employee orientation AND whenever this procedure is updated, AND PROVIDE records of completion of training upon PG&E's request.

6.2 Each quarter, PG&E VM specialist SENDS area VPM / SVPM a listing of all non-exempt MWS from ITS AND from the BackOffice software system.

6.3 Area VPM / SVPM must VERIFY that listed MWS non-exempt trees are in the process of being mitigated / abated.

Major Woody Stem Exemption

6.4 During 2nd quarter of each year, PG&E VM specialist DIRECTS PI contractors to VERIFY that this procedure is being followed.

1. At a minimum, PI contractors are expected to REVIEW a random sample comprised of field locations and tree records for new and existing MWS locations.
2. Local VPM / SVPM PROVIDES input on sample size, focus areas, and review-specific issues.
3. PI contractor must PROVIDE results to local VPM / SVPM at the end of 2nd quarter of each year.

6.5 PG&E VM specialist REPORTS a list of all EXEMPT MWS annually to CAL FIRE by July 1 of each year for previous calendar year.

END of Instructions

DEFINITIONS

Easily Climbable Tree: A tree with scaffold branches present below 8.5 feet from the ground.

Qualified Inspector: An individual that possesses one or more of the following qualifications:

- Certified Arborist through the International Society of Arboriculture (ISA) with a minimum of 18 months experience in utility arboriculture
- An ISA Certified Arborist who possesses the advanced Utility Specialist certification
- A Registered Professional Forester (RPF)

Tree Connects: Conductors are supported by sound and living tree trunks from which all dead or decadent branches have been removed.

VM Back Office: VM Back Office is a web-based software system that includes the Vegetation Management Database (VMD) and the Project Management Database (PMD).

IMPLEMENTATION RESPONSIBILITIES

The vegetation distribution management team is responsible for the implementation, communication, and maintenance for this procedure and associated standard.

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

The vegetation management operations group is responsible for the distribution of this procedure, and for ensuring that the contract vendor provides training and conducts regular reviews.



Major Woody Stem Exemption

GOVERNING DOCUMENT

[TD-7103S, "Transmission Vegetation Management Standard"](#)

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[California Public Utility Commission General Order \(G.O.\) 95, Rule 35](#)

[California Public Recourse Code Section 4293](#)

[California Code of Regulations, Title 14 \(14 CCR\), 1257 Exempt Minimum Clearance Provisions - PRC 4293](#)

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#)

APPENDICES

Appendix A, Insulated Tree Wire Conditions

ATTACHMENTS

[Attachment 1, "Major Woody Stems Exemption Process Flowchart"](#)

[Attachment 2, "Major Woody Stems Categories Table"](#)

[TD-7102P-05-JA01, "MWS Data Entry Job Aid"](#)

[TD-7102P-05-JA02, "Tree Wrap Installation Job Aid"](#)

DOCUMENT REVISION

TD-7102P-05, "Major Woody Stem Exemption Procedure," 08/15/2014, Rev.1

DOCUMENT APPROVER

 Manager, Vegetation Management Operations North



Major Woody Stem Exemption

DOCUMENT OWNER

[REDACTED]
Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED]
Vegetation Program Manager

REVISION NOTES

| Changes Made for Revision 2 in 2017 | |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Where? | What Changed? |
| Section 4.2 | Changed from "within 10 days" to "within 30 days." |
| Section 4.5 | Updated date to 11/15/2019 in "PI must UPDATE all MWS forms to the new e-form by 11/15/2019." |
| Section 6.1 | Training must be conducted during new hire orientation AND provide records of completion upon VPM request. |
| Section 6.2 | Updated to require distribution specialist to send a list non-exempt trees in ITS quarterly. |
| Appendix B, Categories | Moved contents of Appendix B, Categories to Attachment 2, "MWS Categories Table" Updated content of Attachment 2, MWS Categories Table and deleted the Tree Diagram. |
| Appendix C, Major Woody Stems Updated Flowchart – 08/18/2014 | Moved Appendix C flowchart to TD-7102P-05, Attachment 1, Major Woody Stems Flowchart July 2016.vsd |
| Insulated Tree Wire Conditions attachment | Discontinued. The content of this attachment has been moved into Appendix A, Insulated Tree Wire Conditions and updated. |
| Major Woody Stem (MWS) Diagram attachment | Discontinued. This attachment contained an image of the Tree Diagram & Category table); it is replaced by Attachment 2, "MWS Categories Table." |



Major Woody Stem Exemption

Appendix A, Insulated Tree Wire Conditions

Page 1 of 3

This appendix contains images to help identify insulated wire types in the field.

A. Insulated Wire Type ID

1. Rule 35 requirements do not apply to conductors or aerial cables that comply with Rule 57.4 – c, energized at less than 60,000 volts, where trimming or removal is not practical, and where the conductor is separated from the tree with suitable materials or devices to avoid conductor damage by abrasion and grounding of the circuit through tree.
2. Additional information on Tree Wire ID can be found in the “Powerline Equipment Identification Pocket Guide” (January 1, 2008).
3. The following images show the types of installation associated with Tree Wire.

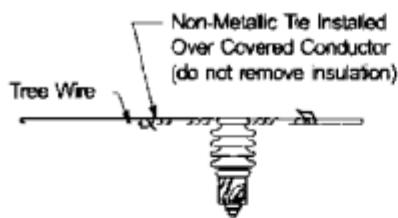


Figure 1
Installation on Tie Top Insulator



Figure 2
Angles Over 15°
(see Note 3 on Page 1)

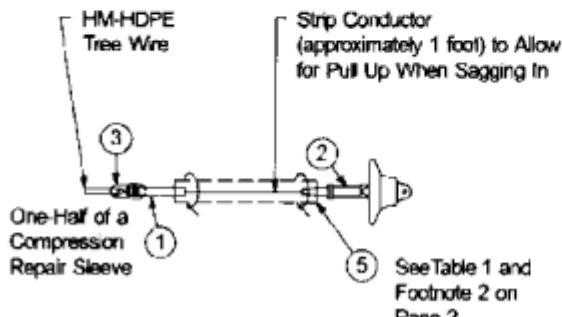


Figure 3
Dead-End Construction
(see Note 4 on Page 1)

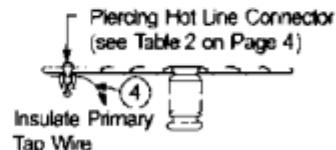


Figure 4
Tap Connection

Figure 1. Types of Installation Associated with Tree Wire



Major Woody Stem Exemption

4. Non-Metallic Tie Wire and Side Tie and Cover



Figure 2. Non-Metallic Tie Wire (on left) and Side Tie and Cover (on right)

5. Raychem Wire Covering

- a Raychem wire cover is exempt from Rule 35 and PRC 4293 if installed correctly.
- b The Raychem sleeve must sufficiently cover the line segment adjacent to the tree or limbs.



Figure 3. Raychem Wire Covering



Major Woody Stem Exemption

6. Weather Proofing

- a Weather proofing can look similar to tree wire, but is not a sufficiently insulated material and cannot be used as an exemption to Rule 35 and PRC 4293 requirements.



Figure 4. Weather Proofing

EXHIBIT H-12-2

Major Woody Stem Exemption

Attachment 2, MWS Categories Table

1. Major Woody Stem Categories Table

| Category | Sub-Category | Applies In | Required Action by PI | Handheld Entry |
|------------|----------------------------------|-------------|-------------------------------------------------------------|------------------------------|
| Exempt | Tree Connect | SRA and LRA | Enter as MWS, select the Tree Connect box. | Exempt – Tree Connect |
| | Raychem / Tree Wire | SRA and LRA | Enter as MWS. | Exempt – Raychem / Tree Wire |
| | 6' – 18" | SRA and LRA | Enter as MWS and fill out form. | Exempt 6" – 18" |
| | 19" – 48" | SRA only | Enter as MWS and fill out form. | Exempt 19" – 48" |
| Non-Exempt | New Construction | SRA and LRA | Enter as Non-Exempt, Mitigate. | N-Ex-New Construction |
| | Climbable | SRA and LRA | Enter as Non-Exempt, Mitigate. | N-Ex-Climb |
| | Tree Connect | SRA and LRA | Enter as Non-Exempt, select the Tree Connect box, Mitigate. | N-Ex-Tree Connect |
| | Less than 6" | SRA and LRA | Enter as Non-Exempt, Mitigate. | N-Ex < 6" |
| | 6" – 18" does not meet criteria | SRA and LRA | Enter as Non-Exempt, Mitigate. | N-Ex 6" – 18" |
| | 19" – 48" does not meet criteria | SRA only | Enter as Non-Exempt, Mitigate. | N-Ex 19" – 48" |

REVISION NOTES

| Where? | What Changed? |
|---------------|----------------------------------------------------------------------|
| Table content | Table content updated for Rev. 2 of procedure. Tree diagram removed. |

EXHIBIT H-13

Changes to Major Woody Stem Exemption Procedure

SUMMARY

This utility bulletin removes the requirement for verification, specifies the training requirements, and clarify reporting requirements for electric vegetation management (VM) work specific to major woody stem (MWS) exemption. This is specific to Section 6 of the procedure.

Level of Use: Informational Use

AFFECTED DOCUMENT

[Utility Procedure TD-7102P-05, "Major Woody Stem Exemption Procedure"](#)

TARGET AUDIENCE

Vegetation management (VM) operational employees and contractors involved in pre-inspection (PI).

WHAT YOU NEED TO KNOW

- Training
 - All personnel conducting VM PI work must review [Utility Procedure TD-7102P-05, "Major Woody Stem Exemption Procedure."](#)
 - PI earn credit by taking VEGM-0106WBT via PG&E Learning Academy.
- Reporting
 - By July 1st, the VM organization must REPORT a list of all EXEMPT MWS to CAL FIRE. The list must include all trees identified as exempt for the prior calendar year (e.g. January 2019-December 2019).

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervisor, Vegetation Management

INCLUSION PLAN

This information will be incorporated in the next revision of [Utility Procedure TD-7102P-05, "Major Woody Stem Exemption Procedure."](#)

EXHIBIT H-14



Inspection Mapping

SUMMARY

NOTE

The new Tree Tracker system will document inspected segments of conductor electronically. Due to changes in circuit configurations (see [Utility Procedure TD-7102P-01, "Distribution Routine Patrol"](#)), this process will continue to be used as a control to ensure compliance and will remain in effect until determined as no longer applicable.

This procedure provides instructions on how to obtain, create, and update master, index, and field maps to document patrol progress and to ensure that all sections of lines are annually inspected as described in the associated Project Management Database (PMD) project.

At the end of the annual inspection, the signed and dated index map is considered confirmation of the inspection by the pre-inspection contractor.

This procedure directly benefits public safety because it is designed to ensure that no line sections are omitted during annual inspections. Missed line sections can lead to outages and fires, creating significant threats to the communities PG&E serves.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation program managers (VPM) and supervising vegetation program managers (SVPM)

Routine pre-inspection (PI) and senior contract utility forester (SCUF) contractors

Vegetation control (VC) PI and general foreman (GF) contractors

Quality Assurance

SAFETY

NA

BEFORE YOU START

1. READ the Definitions section of this document.

Inspection Mapping

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| 3 Verification | 7 |

PROCEDURE STEPS

1 **Mapping - Distribution**

1.1 Master Map

1. VPM must OBTAIN master map(s) for each VM office within area of assignment as follows:

a. REPLACE master maps older than 5 years.

b. After January 1, 2016, OBTAIN all master maps using ED GIS.

(1) New ED GIS map files can be accessed at the following SharePoint location:

<S:\VMShared\Mapping\EDGIS Maps>

Where each S-drive division folder contains two sets of maps:

- 11 by 17-inch detailed circuit maps (new master maps)
- Circuit overview maps (in S-drive folder labeled as Index Maps)

(2) SEND requests for printed master maps to repro request at:
reprorequest@pge.com.

c. IF the maps provided on the S-drive are not sufficient for scale or features,
 THEN VPM must CONTACT document owner for guidance.

2. IF replacing legacy maps with new ED GIS maps,

THEN routine PI or VC PI must TRANSFER all pertinent information (access issues, safety, etc.) to new ED GIS MAPS.

Inspection Mapping

1.1 (continued)

3. Within two weeks of project completion (inspection), SCUF or VC GF must VERIFY that the master map is updated with permanent changes on the current index map, including new:
 - Line segments
 - Equipment
 - Interface points
 - Private lines

1.2 Index Map

1. Before the project inspection, PI COPIES the master map to create the current year index map.
 - a. For 60/70 KV lines (standalone and under build), PI MAKES an index map using current available GIS information, unless ED GIS maps have replaced legacy maps.
 - b. PI must ADD current year AND name of the assigned PMD project / circuit section to the index map.
 - c. PI must VERIFY state responsibility area (SRA) / local responsibility area (LRA) boundaries in MapGuide GIS, based on the most current information.
 - (1) For legacy maps, PI must TRANSFER delineations to index map.
2. Within 1 week of completing inspection of assigned project, PI must UPDATE, HIGHLIGHT, SIGN AND DATE index map.

NOTE

The index map is considered legal documentation and evidence of project completion. The index map is not the circuit overview map.

3. Within 2 weeks of completing project inspection, SCUF OR VC GF must REVIEW, DATE AND SIGN index map.
 - a. FILE index map in the project folder.
 - b. RETAIN index maps for 10 years.
 - (1) Maps may be stored at an approved offsite storage facility after 2 years.

Inspection Mapping

1.3 Field Map

1. IF a project is only assigned to one PI,
THEN the index and field map become the same.
2. IF a project is assigned to more than one PI,
THEN before the project inspection, PI must CREATE a field map from the index map.
3. PI must HIGHLIGHT assigned area of the field map to INDICATE patrol progress AND ENSURE all assigned lines are inspected.
4. PI must UPDATE field map with new:
 - Line
 - Equipment
 - Access notes
 - Private lines
 - Discontinued idle lines
 - Interface points
 - Other information useful for tree trim contractors and future inspections
5. IF required by PG&E OR requested by tree trim contractors,
THEN PI must UPDATE field map with current year routing.
 - a. PI FILES field map in project folder.
 - b. PI RETAINS index maps for 10 years.
 - (1) Maps may be stored at an approved offsite storage facility after 2 years.

1.4 Idle Lines

1. PI may only IDENTIFY line as idle on field map when the line meets idle line requirements of [Utility Procedure TD-7102P-01, "Distribution Routine Patrol."](#)

1.5 Privately Owned Line (POL)

1. PI may only IDENTIFY POL on field map IF previously verified OR at the discretion of the VPM.

Inspection Mapping

1.6 Interface Points

1. PI must VERIFY interface points with all adjacent divisions.
2. PI must DOCUMENT interface points on [Utility Procedure Attachment 2, TD-7102P-06-F02, "Interface Point Form"](#), on the following SharePoint site:
<https://sps.utility.pge.com/sites/vpm/Interface%20Point%20Verification/Forms/AllItems.aspx>
 - a. UPDATE the department spreadsheet with all interface points rather than uploading separate forms.
 - b. SAVE a copy of the file as a local backup.
3. PI must CREATE a vegetation management database (VMD) record for each interface point.

2 Mapping – Transmission

2.1 Index Map

1. Before the start of the current patrol, PI must MAKE an index map using current GIS information. The Index Map must:
 - Include transmission line or corridor name AND the current year.
 - Be of sufficient scale to clearly identify all tower numbers, including corridor entry or exit towers.
 - Include all transmission lines if patrolled as a corridor.
2. Within 1 week of completing inspection of assigned project, PI must UPDATE, HIGHLIGHT, SIGN AND DATE index map.

NOTE

Index map is considered legal documentation and evidence of project completion.

3. Within 2 weeks of completing project inspection, SCUF OR VC GF must do the following:
 - a. REVIEW, DATE AND SIGN index map.
 - b. FILE index map in the project folder.
 - c. RETAIN index maps for 10 years.
 - (1) Maps may be stored at an approved offsite storage facility after 2 years.

Inspection Mapping

2.2 Field Map

1. IF a project is only assigned to one PI,
THEN index and field map become the same.
2. IF a project is assigned to more than one PI,
THEN before the project inspection, PI must CREATE field map from the index map.
3. PI must HIGHLIGHT assigned area of the field map to INDICATE patrol progress AND ENSURE all assigned lines are inspected.
4. PI must UPDATE field map with new:
 - Line
 - Equipment
 - Access notes
 - Private lines
 - Discontinued idle lines
 - Interface points
 - Other information useful for tree trim contractors and future inspections
5. IF required by PG&E OR requested by tree trim contractors,
THEN PI must do the following:
 - a. UPDATE field map with current year routing.
 - b. FILE field map in project folder.
 - c. RETAIN index maps for 10 years.
 - (1) Maps may be stored at an approved offsite storage facility after 2 years.

2.3 Idle Lines

1. PI may only IDENTIFY line as idle on field map when the line meets idle line requirements specified in the applicable procedure:
 - [Utility Procedure TD-7103P-01, "Transmission Routine Non-Orchard Patrol"](#)
 - [Utility Procedure TD-7103P-02, "Transmission Routine Orchard Patrol"](#)

Inspection Mapping

2.4 Privately Owned Line

1. PI may only IDENTIFY POL on field map when the line meets POL requirements specified in the applicable procedure:
 - [Utility Procedure TD-7103P-01, "Transmission Routine Non-Orchard Patrol"](#)
 - [Utility Procedure TD-7103P-02, "Transmission Routine Orchard Patrol"](#)
2. IF POL is previously verified OR at the discretion of the VPM.
THEN PI may IDENTIFY POL on field map.

2.5 Interface Points

1. PI must VERIFY interface points with all adjacent divisions.
2. PI must DOCUMENT interface points on [Attachment 2, TD-7102P-06-F02, "Interface Point Form,"](#) located on the following SharePoint site:
<https://sps.utility.pge.com/sites/vpm/Interface%20Point%20Verification/Forms/AllItems.aspx>
 - a. UPDATE the department master spreadsheet with all interface points, rather than uploading separate forms.
 - b. SAVE a copy of the file as a local backup.
3. PI must CREATE a VMD record for each interface point.

3 Verification

3.1 Each quarter, SCUFs must AUDIT a minimum of 5 randomly selected projects, as follows:

1. IF there are multiple VM headquarters within a division,
THEN PERFORM at least one audit for each headquarters.
2. INCLUDE an audit on at least one transmission project.
3. COMPLETE the [Attachment 1, TD-7102P-06-F01, "Mapping Procedure Verification Form"](#) spreadsheet.
4. POST audits on VM SharePoint, Procedure Verification page for the current year.
<https://sps.utility.pge.com/sites/vpm/default.aspx>
5. NOTIFY VPMs by email that the audits are complete.

3.2 VPMs must REVIEW AND VALIDATE audits within two weeks of SCUF submittal.



Inspection Mapping

1. VPMs VERIFY that SCUF entered 5 audits on [Attachment 1, TD-7102P-06-F01, "Mapping Procedure Verification Form"](#) spreadsheet.

END of Instructions

Inspection Mapping

DEFINITIONS

Circuit Overview Map: Shows all grid sections relevant to a circuit. This map is provided to help organize multiple map sections, especially for larger circuits.

Index Map: An annual working copy of the Master Map, which is updated to reflect inspection completion and any newly identified conductors not present on the original Master Map.

Interface Point: A mutually agreed upon field location marking the boundary between divisions and/or PI/tree trim contractors contract responsibility.

Master Map: A spatial depiction of all conductors associated with a given circuit. The Master Map is a “snapshot” of the circuit operating configuration from ED GIS (or equivalent legacy system) at a moment in time.

The Master Map indication of circuit operating configuration could differ from the live/real-world circuit operating configuration at any time after acquisition.

Master Maps may be kept as a book of highlighted circuit grids, or as single Master Maps filed within each project.

Privately Owned Line (POL): A utility line not owned by PG&E. PG&E might or might not have a maintenance agreement for VM.

Project Folder: Physical paper file or similar repository maintained on site at corresponding local VM office.

IMPLEMENTATION RESPONSIBILITIES

The Vegetation Management team is responsible for the maintenance, communication, and implementation of this procedure.

GOVERNING DOCUMENT

[Utility Standard TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

[Utility Standard TD-7103S, "Transmission Vegetation Management Standard"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[State of California General Order 95 \(G.O. 95\), "Rules for Overhead Electric Line Construction," Rule 35, "Vegetation Management"](#)

California Code of Regulations:

[Minimum Clearance Provisions - Public Resource Code \(PRC\) 4292](#)

[Exempt Minimum Clearance Provisions - Public Resource Code \(PRC\) 4293](#)



Inspection Mapping

REFERENCE DOCUMENTS

Developmental References:

N/A

Supplemental References:

[Utility Procedure TD-7102P-01, "Distribution Routine Patrol"](#)

[Utility Procedure TD-7103P-01, "Transmission Routine Non-Orchard Patrol"](#)

[Utility Procedure TD-7103P-02, "Transmission Routine Orchard Patrol"](#)

APPENDICES

NA

ATTACHMENTS

[Utility Procedure Attachment 1, TD-7102P-06-F01, "Mapping Procedure Verification Form"](#)

[Utility Procedure Attachment 2, TD-7102P-06-F02, "Interface Point Form"](#)

DOCUMENT REVISION

VEG1022P Rev 1, Mapping Procedure

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Program Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager, Vegetation Management

Inspection Mapping

REVISION NOTES

| Where? | What Changed? |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Throughout | Updated acronyms. |
| Document # | Updated Revision # to 3. |
| Summary | Added note box. |
| Safety | Removed language and replaced with NA. |
| Target Audience | Replaced with a specified audience. |
| Section 1.5 | Removed "Private Facilities Procedure (currently in development)". Removed step 2: 2. Until the Private Facilities Procedure is approved, AND IF POL previously verified OR at the discretion of the VPM, THEN PI may IDENTIFY POL on field map. |
| Section 2.4.1 | Removed bullet "Private Facilities Procedure (currently in development)". |
| Section 3 | Removed instruction for VM Specialist notification. Updated timeline for VPM verification. |
| Reference Documents | Removed "Private Facilities Procedure (currently in development)". |
| Document Approver | Updated document approver. |

EXHIBIT H-15

Facility Protect and Work Difficulty Classification Procedure

SUMMARY

The purpose of the Facility Protect and Work Difficulty Classification Procedure is to provide Vegetation Management (VM) with guidelines for:

- Categorizing types of Facility Protection work
- Classifying work difficulty
- Completing Notice of Tree Work (NTW) forms

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation Management Guidance and Support

Vegetation Management Operations (North and South)

Vegetation Management Contractors

- Pre-Inspection (PI) contractors
- Tree Contractors (TC)
- Quality Control (QC) contractors

SAFETY

PG&E and contract workers must review and follow all applicable safety standards and procedures before performing work. This includes reviewing tailboards as well as wearing appropriate Personal Protective Equipment (PPE) for the job.

If the situation ever becomes unsafe, stop work and leave the site. Work can be rescheduled with the support of corporate security and law enforcement if necessary.

All PG&E Safety Policies, Procedures, and Manuals can be viewed on PG&E's Safety website: <http://pgeweb/sharedservices/safety/Pages/default.aspx>.

BEFORE YOU START

1. Read the Transmission Routine Patrol Procedure and Distribution Patrol Standard.
2. Review the Definitions Section of this document.

Facility Protect and Work Difficulty Classification Procedure

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| 4 Tree Contractor Changes and Invoicing | 6 |
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PROCEDURE STEPS

1 Identifying and Classifying a Hazard Tree / Facility Protection

1.1 Per the Distribution and Transmission Patrol Standard/Procedures, PI and TC will REMOVE or Facility Protect Prune all trees that are dead, show signs of disease, decay or ground / root disturbance that may fall into or otherwise impact the primary conductors or secondary stand-alone.

NOTE

Trees that are an imminent threat to public safety must be addressed by REMOVING or PERFORMING A FACILITY PROTECT PRUNE to protect the facilities.

1.2 PI will INSPECT the tree to determine work type and difficulty.

1.3 Overhangs

- IF a tree limb has the potential to fall and cross-phase the primary conductors, but will not damage the facilities in the event of failure,

THEN PI PRESCRIBES WORK for the dead or structurally unsound limbs that are above the conductors,

AND ASSIGN handheld code: **FOA**.



Facility Protect and Work Difficulty Classification Procedure

- IF the limb is of sufficient size to cause damage to facilities,
THEN PRESCRIBE WORK for the dead or structurally unsound limbs that are above the conductor,
AND ASSIGN handheld code: **FOB**.

1.4 Facility Protect Prune

1. IF removing a portion of a tree where the work removes **1/3 or less** of the crown and the final cuts are made **more than** 4.5 feet above the ground will protect the facilities,
THEN PI PRESCRIBE Minor Facility Protect Prune,
AND ASSIGN handheld code: **FAA** or **FAB**.

NOTE

In the FAB code, the **A** (**FAB**) denotes the work type, (i.e., major or minor), while the **B** (**FAB**) denotes the work difficulty.

2. PI will RECOMMEND Minor Facility Protect Prune which can include, but are not limited to:
 - REMOVING one or more structurally unsound branches.
 - REMOVING a dead top on a live tree.
 - REMOVING a single stem of a multi-stemmed tree, removing a forked top, etc.
3. IF REMOVING a portion of a tree where the work removes **more than** a **1/3** of the crown and the final cuts are made **more than** 4.5 feet above the ground,
THEN PRESCRIBE Major Facility Protect Prune,
AND ASSIGN handheld code: **FBA** or **FBB**
4. Major Facility Protect Prune can include but is not limited to:
 - REMOVING multiple structurally unsound branches.
 - REMOVING the entire canopy of a tree but leaving the bole standing.
 - REMOVING a single large branch that includes more than **1/3** of the crown, etc.

Facility Protect and Work Difficulty Classification Procedure

NOTE

IF the same tree requires work to address growth and a hazard,

THEN ASSIGN for growth and note Facility Protect in the comments.

1.5 Facility Protect Removal / Remove and Treat

1. IF removing 100% of the canopy of a tree is necessary and the final cuts are made at or below 4.5 feet above the ground,

THEN PRESCRIBE Facility Protect Removal or Remove and Treat,

AND ASSIGN handheld code: **FS-Rmv_A** or **FS_Rmv_B**.

2 Work Difficulty

2.1 Class A: PI will ASSIGN the trim code modifier for work difficulty Class A when one of the following conditions is met:

- Property owner does all clean-up.
- Tree is felled entire and left as is.
- Debris clean-up is limited to only lop and scatter.
- Debris clean-up is only piling of brush.
- Chipping debris less than 4 inch diameter where the location is chipper accessible (within 100 ft.), and it is a small volume of debris (equal to or less than 10 cubic yds. when stacked).

2.2 Class B: PI will ASSIGN the trim code modifier for work difficulty Class B when one of the following conditions is met:

- Work must be pieced, lowered, tied off and directed.
- Large wood must be cut into numerous smaller sections.
- Chipping debris less than 4 inch diameter where the location is chipper accessible (within 100 ft.), and it is large volume of debris (more than 10 cubic yards when stacked).



Facility Protect and Work Difficulty Classification Procedure

NOTE

By contract, a TC is responsible to clean-up debris less than 4 inches in diameter unless specified otherwise in the Notice of Tree Work Form or on the work request.

3 Notice of Tree Work (NTW) Form

3.1 PI will COMPLETE a NTW form when a tree is identified as a Facility Protect Removal or a Facility Protect Prune-Major only.

1. ENTER the form number into the handheld.
2. IF the tree is dead,

THEN a property owner signature is not required at the discretion of the local VPM/ SVPM.

3. IF the property owner is not present at the time of visit,

THEN LEAVE the Alert door card.

NOTE

For the purposes of this procedure, a "dead" tree is defined as no longer sustaining life, ALL leaves or needles are brown or have dropped from the tree as a result of tree decline and not tree dormancy.

3.2 ENTER "NA" in the removal form number field for Facility Protect Overhang and Facility Protect Prune-Minor.

1. NTW forms are not required.
- IF a PG&E Representative or PI Leadership request NTW forms for Facility Protect Overhang or Minor Prune,

THEN there is no need for a customer signature,

AND ENTER the removal form number into the handheld.

3.3 MEASURE all Facility Protect trees requiring a NTW form for diameter in the event that the TC elects to remove rather than trim.

- IF a Facility Protect Prune-Major would be a single trim but is a multi-stemmed removal,

THEN INDICATE in the handheld comments and NOTE on the removal form the number and class of removals.



Facility Protect and Work Difficulty Classification Procedure

3.4 The language written on the removal form is as follows:

"PG&E will perform the minimum work necessary to protect the electrical facilities. The tree company will determine from a job-site inspection whether the tree is to be topped or felled. Property owner is responsible for the clean-up of all debris and wood."

3.5 At the direction of the VPM or SVPM, the above language may be modified in situations that are covered by a special use permit such as Cal Trans, USFS, and National Parks; or when the tree must be removed to manage an imminent hazard to other targets.

NOTE

TC is responsible for leaving all debris in a manner consistent with the VM Environmental Best Management Practices.

3.6 IF the property owner refuses to sign the removal form,

THEN send to VPM for REVIEW and decide to further NEGOTIATE with the property owner,
OR INITIATE the Refusal Process.

4 Tree Contractor Changes and Invoicing

- IF after a job-site inspection, TC elects to perform a Facility Protect Removal rather than a Facility Protect Prune,

THEN INDICATE the change in trim code on the hard copy of the work request,
AND the change will be made in the electronic billing system (refer to Invoicing Procedure for more information).

4.1 OBTAIN a signed removal form when Facility Protect Minor Prune is changed to a Facility Protect Removal.

END of Instructions



Facility Protect and Work Difficulty Classification Procedure

DEFINITIONS

Facility Protection is work performed to address tree failure, not tree growth. It targets any tree or portion of a tree that has the potential to fail and come into contact with the high voltage conductors before the next scheduled patrol/trim cycle.

IMPLEMENTATION RESPONSIBILITIES

The Vegetation Management document owner is responsible for the rollout, communication and maintenance of this Procedure as well as the annual review of this document.

GOVERNING DOCUMENT

VM Transmission Patrol Procedure

VM Distribution Patrol Standard

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

Fed OSHA 29CFR 1910.269

REFERENCE DOCUMENTS

VM Environmental Best Management Practices

APPENDIX

Appendix A: Facility Protect / Removal Handheld Code Guide

ATTACHMENTS

NA

DOCUMENT REVISION

Facility Protect and Work Difficulty Classification Procedure, v3.1 12/01/09

DOCUMENT APPROVER

[REDACTED], Vegetation Management Sr. Operations Manager, PG&E

DOCUMENT OWNER

[REDACTED], VM North Coast Supervising Vegetation Program Manager, PG&E

DOCUMENT CONTACT

[REDACTED] VM Sr. Vegetation Program Manager (North), PG&E

Facility Protect and Work Difficulty Classification Procedure

REVISION NOTES

| Where? | What Changed? |
|-----------------|---------------------------------------------------------------------------------------------------------------------|
| Entire Document | Reformatted to meet GDM requirements. |
| | Removed 'Data Entry' section |
| Page 2 – Step 1 | Included Stand Alone Secondary in Procedure Step 1 - "Identifying and Classifying a Hazard Tree/Facility Protection |
| Pages 7 and 8 | Changed Document Owner and Document Contact |
| Entire document | Renumbered per GDM Numbering Procedure in preparation for Documentum migration. |



Facility Protect and Work Difficulty Classification Procedure

Appendix A: Facility Protect / Removal Handheld Code Guide

| Facility Protect/Removal HH Code Guide | | | | |
|-------------------------------------------------------|----------------------|---|-----------------|--------------|
| FACILITY PROTECT PRUNE (stump will be OVER 4.5' tall) | | | | |
| FACILITY PROTECT | EXTENT OF TRIM | | WORK DIFFICULTY | TRIM CODE |
| F | Minor (1/3-) | A | Class A* | FAA |
| F | Minor (1/3-) | A | Class B** | FAB |
| F | Major (1/3+) | B | Class A* | FBA |
| F | Major (1/3+) | B | Class B** | FBB |
| FACILITY PROTECT OVERHANG | | | | |
| FACILITY PROTECT | OVERHANG | | WORK DIFFICULTY | TRIM CODE |
| F | O | | Class A* | FOA |
| F | O | | Class B** | FOB |
| FACILITY PROTECT REMOVAL (stump under 4.5') | | | | |
| FACILITY PROTECT | AUTOMATIC RMVL CLASS | | WORK DIFFICULTY | TRIM CODE |
| FS | # | | Class A* | FS-Rmv#A |
| FS | # | | Class B** | FS-Rmv#B |
| FACILITY PROTECT RMVL + TREAT (stump under 4.5') | | | | |
| FACILITY PROTECT | AUTOMATIC RMVL CLASS | | WORK DIFFICULTY | TRIM CODE |
| FS | # | | Class A* | FS-Rmv#A+Trt |
| FS | # | | Class B** | FS-Rmv#B+Trt |

Facility Protection work is performed to address potential tree FAILURE

* Work Difficulty – Class

A

- Property owner does all clean-up
- Drop and walk, tree is felled
- Debris clean-up is only lop and scatter
- Debris clean-up is only piling of brush
- Chipping debris less than 4 inch diameter where the location is chipper accessible (within 100 ft), and it is a small volume of debris (equal to or less than 10 cu yds. when stacked)

** Work Difficulty – Class

B

All other work not in Class A, for example:

- Work must be pieced, lowered, tied off and directed
- Large wood must be cut into numerous smaller sections
- Chipping debris less than 4 inch diameter where the location is chipper accessible (within 100 ft), and it is a large volume of debris (more than 10 cu yds. when stacked)

Updated May 2007

EXHIBIT H-16

Reporting Abnormal Field Conditions Procedure

SUMMARY

Abnormal field conditions may arise from within or outside PG&E's electric Right-Of-Way (ROW) as a result of non-vegetative conditions such as equipment failure / damage, third-party equipment, weather, or other influences.

To ensure consistency across the system, Vegetation Management (VM) employees and contractors must follow the steps outlined in this procedure to report abnormal conditions (e.g., floaters, broken cross arms, broken poles, objects on high and low voltage lines) and other equipment and non-vegetation related conditions that require near term or immediate attention.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation Management Governance & Support

Vegetation Management Operations

Grid Control Center (GCC)

Vegetation Management Contractors

- Pre-Inspection (PI) Contractors
- Tree Crew (TC) Contractors
- Quality Control (QC) Contractors

SAFETY

PG&E staff and contract workers must review and follow all applicable safety standards and procedures before performing work. This includes reviewing tailboards and wearing appropriate Personal Protective Equipment (PPE) for the job.

BEFORE YOU START

Review the Definitions Section of this document. All VM employees and contractors must keep up-to-date contact lists.

Reporting Abnormal Field Conditions Procedure

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| 2 Transmission Abnormal Conditions | 2 |

PROCEDURE STEPS

1 Distribution Abnormal Conditions

1.1 IF a VM employee / contractor identifies an abnormal field condition on a distribution facility,

THEN the employee / contractor must call the PG&E dispatch number:
1-866-411-4743,

AND provide the following information:

- Description of the abnormal field condition
- Site location / directions: source side device, meter number, address, city, nearest cross street, picture of abnormal field condition, GPS coordinates, etc.
- Any access issues or restrictions
- Employee contact number in case additional information is needed

1.2 IF the abnormal field condition presents an immediate risk to the distribution facility,

THEN the employee / contractor must remain on-site until appropriate PG&E resources arrive,
AND they are then released.

1.3 After contacting the PG&E dispatch number, the VM employee / contractor must contact the area VPM / SVPM to notify them of the abnormal condition

2 Transmission Abnormal Conditions

2.1 IF a VM employee / contractor identifies an abnormal field condition on transmission facilities / lines,

THEN they must contact the local T-Line Supervisor for direction,

AND provide the following information:

Reporting Abnormal Field Conditions Procedure

- Description of the abnormal field condition
- Site location / directions: source side device, meter number, address, city, nearest cross street, picture of abnormal field condition, GPS coordinates, etc.
- Any access issues or restrictions
- Employee contact number in case additional information is needed

2.2 After contacting the T-line supervisor, the VM employee / contractor must contact the area VPM / SVPM to notify them of the abnormal condition.

2.3 IF the abnormal field condition presents an immediate risk to the transmission facilities,

THEN the following sequence of PG&E personnel must be notified until direct contact with a PG&E employee is made:

1. Local T-Line Supervisor
2. PG&E or Contract Vegetation Program Manager (VPM)
3. Notify the GCC if directed by the Local T-Line Supervisor:
(707) 449-6700 or (707) 449-6749
4. PG&E Transmission Sr. Program Manager (Sr. PM)
5. PG&E Supervising Vegetation Program Manager (SVPM)
6. PG&E Vegetation Management Operations Manager (OM)

AND provide the following information:

- Description of the abnormal field condition
- Site location / directions: source side device, meter number, address, city, nearest cross street, picture of abnormal field condition, GPS coordinates, etc.
- Any access issues or restrictions
- Employee contact number in case additional information is needed

2.4 AFTER PG&E personnel have been notified of the abnormal field condition which presents an immediate risk to the transmission facilities,

THEN the employee / contractor must remain on site until appropriate PG&E resources arrive,

AND they are then released.



Reporting Abnormal Field Conditions Procedure

DEFINITIONS

Abnormal Field Condition: Abnormal field conditions may include, but are not limited to; broken cross arms, floaters, objects on wires, broken poles, frayed conductors, arcing wires, etc.

Right-of-Way (or Easement): The corridor of land under a transmission line needed to operate the line. "Easement" refers to the legal description of that corridor.

Grid Control Center (GCC): PG&E's transmission control center that holds switching authority for the specific transmission line where a potential immediate risk may exist. When an immediate risk is confirmed, GCC notification is required without undue delay.

Hazardous Condition: A field condition affecting transmission or distribution facilities which does not pose an immediate risk, but where the condition has the potential to become an immediate risk.

Immediate Risk: A field condition affecting transmission or distribution facilities that requires urgent, immediate, and continued action until the condition is repaired or no longer presents a hazard. The probability of injuries to third parties and employees, property damage, or service interruptions to customers is high.

IMPLEMENTATION RESPONSIBILITIES

The Vegetation Management team is responsible for the implementation, communication, and maintenance of this procedure and associated standard.

GOVERNING DOCUMENT

Transmission Vegetation Management Standard

Utility Operations Standard S2014

Utility Operations Standard S2015

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

CPUC General Order (GO) 165

REFERENCE DOCUMENTS

Distribution Routine Patrol Standard

Transmission Routine Patrol Procedure

Transmission Orchard Patrol Procedure



Reporting Abnormal Field Conditions Procedure

Transmission Vegetation Imminent Risk Procedure

T&D Hazard Notification Procedure

Transmission Right-of-Way Maintenance Procedure

APPENDICES

NA

ATTACHMENTS

NA

DOCUMENT REVISION

5-Minute Meeting: Abnormal Field Condition Reporting, 08/2013

DOCUMENT APPROVER

[REDACTED], Sr. Manager, Vegetation Management – Operations

Signature & Date

RECOMMENDED BY

[REDACTED], Manager, Vegetation Management - Operations

Signature & Date

DOCUMENT OWNER

[REDACTED], Vegetation Management, Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Vegetation Management, Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|-----------------|---------------------------------------------------------------------------------|
| Entire Document | Reformatted to meet GDM requirements. |
| Entire document | Renumbered per GDM Numbering Procedure in preparation for Documentum migration. |

EXHIBIT H-17

Vegetation Management 2016 Second Patrol - Scope of Work

SUMMARY

This procedure provides an overview of the work performed by Second Patrol.

This procedure is intended for use only on those projects identified and assigned by the PG&E representative as Second Patrol Projects to address only dead, dying, and declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail. Use of this procedure is time-limited, and is expected to end in late 2016.

Second Patrols are often identified with the label Catastrophic Event Memorandum Account (CEMA) as this is how Second Patrol Projects are distinguished in the VM Back Office software system and in all Vegetation Management Database (VMD) and Project Management Database (PMD) records and reports. The term "Second Patrol" is preferred and is used in this document.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management governance and support personnel

Vegetation management operations personnel – North and South

Vegetation management Second Patrols: pre-inspector (PI) and tree crew (TC) contractors

SAFETY

NA

BEFORE YOU START

1. REVIEW the Definitions Section in this document.
2. REVIEW the following VM documents:
 - [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)
 - [TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)



Vegetation Management 2016 Second Patrol - Scope of Work

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PROCEDURE STEPS

1 General Requirements

1.1 PG&E personnel and contract workers must WEAR appropriate personal protective equipment for the job.

1.2 Variations from Second Patrol Practices

1. Second Patrol Project Manager must APPROVE any variation from Second Patrol Practices.

1.3 Hazard Notification/Imminent Threat

1. IF hazardous tree conditions are found during the Enhanced, After Hours, or Aerial patrols,

THEN FOLLOW [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#) for reporting and mitigating hazards.



Vegetation Management 2016 Second Patrol - Scope of Work

2 Enhanced Patrol – Prescription and Notification

NOTE

Enhanced Patrol Guidelines are intended for use only on projects identified and assigned by the PG&E Representative.

2.1 Second Patrols (PI and TC) are responsible for doing the following:

1. LISTING trees for removal or PRUNING sufficiently to remove any hazard
2. NOTIFYING customers of work using personal contact and door hangers
3. OBTAINING signature of property owner on Notice of Tree Work (NTW) form before removing more than 1/3 of the canopy of an individual tree
4. At the discretion of the Second Patrol contract forester:
 - REQUESTING the local area vegetation program manager (VPM) to sign the NTW,
 - AND REQUESTING the clerk to send a notification letter to notify property owner
5. IF a property owner refuses the proposed work,

THEN PI FOLLOWS the requirements of the [TD-7102P-04, "Distribution Vegetation Refusal Procedure."](#)

6. CHIPPING, REMOVING, or LOPPING and SCATTERING all debris (4" or less in diameter) as per PG&E VM Environmental Best Management Practices (BMPs), #27, posted on the VM shared drive at:

[VM\VMShared\Environmental](#)

7. MARKING trees with paint the color yellow.

2.2 PI Inspections

1. Prior to the start of Second Patrol, PI CONTACTS the local area vegetation management (VM) office to learn of any customer issues related to the Second Patrol Project.
2. PI CAPTURES data in the field using a mobile device (preferred), OR COMPLETES the Aerial Patrol Form (See Appendix A, Aerial Patrol Form).
3. IF patrol uses the Aerial Patrol Form or the Enhanced Patrol Field Data Form to list work,



Vegetation Management 2016 Second Patrol - Scope of Work

THEN PI enters data from the form to create electronic records in the Vegetation Management Database (VMD) to generate work for contractors.

2.3 Second Patrol Work Prescriptions

NOTE

Second Patrol is work performed to address tree failure only, **not** tree growth.

1. Second Patrol IDENTIFIES any dead, declining, dying trees, or dead portions of tree, that have the potential to fail and come into contact with facilities before the next annual patrol.
2. Second Patrol USES facility-protect codes when prescribing work as per the [TD-7102P-08, "Facility Protect and Work Difficulty Procedure."](#)

2.4 Routine Compliance Work Identified During Second Patrol

1. IDENTIFY trees needing removal or pruning that fall within the current routine patrol procedure, including trees that are likely to grow into or near contact with primary voltage electrical conductors before next trim cycle;
AND ENTER the routine work in mobile device as a **Missed Tree** tag.
2. IDENTIFY significantly leaning trees with indications of basal defect or soil instability, and uprooted trees in the surrounding stand, that are likely to fail into the facilities before the next annual patrol;
AND ENTER the routine work for these trees in mobile device as an **Unforeseen** tag.
3. IDENTIFY structurally unsound green limbs and dead palm fronds above the conductors with the potential to fail into the facilities (causing cross-phasing or damage) before the next routine patrol that should be managed within the routine program, **not** within the Second Patrol project;
AND ENTER this routine work in mobile device as an **Unforeseen** tag.
4. Second Patrol data management specialist (DMS) NOTIFIES local area DMS of routine tags that have been created and uploaded to the system.

2.5 Trees Identified During Previous Annual Patrol

1. IF a tree was identified during a prior annual patrol (as indicated by the paint markings, read-only preload, or verification in the VM Back Office software system, and not yet completed),

THEN Second Patrol does **not** list this tree for work as a part of the Second Patrol,

AND the Second Patrol inspector NOTIFIES the Second Patrol contract forester.

Vegetation Management 2016 Second Patrol - Scope of Work

2.5 (continued)

2. IF prior year work is still outstanding when the routine circuit has been closed by the tree crew,

THEN the Second Patrol contract forester NOTIFIES the local area program manager about the outstanding work.

3 After Hours Patrols by Contractors

3.1 Pre-Inspection (PI) Contractors

1. AFTER the contractor's normal workday on Red Flag Days AND DURING Fire Weather Watch times,

THEN the Second Patrol contract forester REQUESTS the PI to patrol in selected areas.

2. The PI COMPLETES after-hours inspection patrols, following [TD-7102P-23, "Vegetation Management 2016 Second Patrol - Practices."](#)

3.2 Tree Contractors (TC)

1. AFTER the contractor's normal workday on Red Flag Days AND DURING Fire Weather Watch times,

THEN the Second Patrol contract forester requests selected TCs to perform after-hours drive-through patrols of recently completed work to do the following:

- CHECK for potential ignitions from the prior day's work
- LOOK for locations with remaining hazardous conditions

4 Aerial Patrols

NOTE

Aerial patrols include both an aerial inspection and a follow-up ground inspection of specific distribution lines in the State Responsibility Area (SRA).

4.1 During an aerial patrol, the inspector is expected to do the following:

1. HIGHLIGHT a map showing the line sections associated with the patrol.
2. IDENTIFY dead, dying, or declining trees, and dead portions of trees.
3. INDICATE the location of the trees on the highlighted map as accurately as possible.

Vegetation Management 2016 Second Patrol - Scope of Work

4.1 (continued)

4. COMPLETE an Aerial Patrol Form, including GPS coordinates (See Appendix A, Aerial Patrol Form).
5. PROVIDE the completed Aerial Patrol Form to the Second Patrol senior utility consulting forester (SCUF).

5 Abnormal Field Conditions (Equipment Issue)

NOTE

Abnormal field conditions can arise from within or outside PG&E's electric right-of-way (ROW) as a result of non-vegetative conditions, such as equipment failure or damage, third party equipment, weather, or other influences.

5.1 To ensure consistency across the system, VM employees and contractors must do the following:

1. FOLLOW the steps outlined in this procedure to report abnormal conditions (e.g., floaters, broken cross arms, broken poles, objects on high and low voltage lines) and other equipment and non-vegetation related conditions that require near term or immediate attention.
2. FOLLOW the instructions in [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#) AND INFORM the Second Patrol DMS about the abnormal condition location by the end of the work day.

END of Instructions

DEFINITIONS

Red Flag and Fire Weather Watch Days

The National Weather Service and Cal Fire issue Red Flag Warnings and Fire Weather Watches to provide notice of upcoming weather patterns that might include low relative humidity, strong winds, dry fuels, the possibility of dry lightning strikes, or any combination of the above. These weather patterns could lead to rapid or dramatic increases in wildfire activity and extreme fire behavior.

- A Red Flag Warning is the highest level of alert; it is issued for weather events that could result in extreme fire behavior within 24 hours.

Vegetation Management 2016 Second Patrol - Scope of Work

- A Fire Weather Watch is one level of alert below a Red Flag Warning; it is issued when weather conditions could result in dangerous fire behavior within the next 12 to 72 hours.

Second Patrol Projects

Second Patrol Projects address only dead, dying, and declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail; Second Patrol Projects do **not** address tree growth.

VM Back Office

VM Back Office is a web-based software system that includes the Vegetation Management Database (VMD) and the Project Management Database (PMD).

IMPLEMENTATION RESPONSIBILITIES

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

Vegetation management operations personnel are responsible for the distribution of this procedure by providing training and conducting regular reviews.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7102P-01, "Distribution Routine Patrol Procedure"](#)

[TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)



Vegetation Management 2016 Second Patrol - Scope of Work

[TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)

[TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)

[TD-7102P-23, "Vegetation Management 2016 Second Patrol - Practices."](#)

[TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#)

APPENDICES

Appendix A, Aerial Patrol Form

ATTACHMENTS

NA

DOCUMENT REVISION

NA

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management

[REDACTED], Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager

[REDACTED], Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|--------|-----------------------|
| NA | New Utility Procedure |



Vegetation Management 2016 Second Patrol - Scope of Work

Appendix A, Aerial Patrol Form

Page 1 of 1

PAGE #:

EXHIBIT H-18-1

Vegetation Management 2016 Second Patrol - Practices

SUMMARY

This procedure provides guidance for patrol practices for pre-inspector (PI) and tree crew (TC) patrols associated with the 2016 Second Patrol.

This procedure is intended for use only on those projects identified and assigned by the PG&E Representative as Second Patrol Projects to address only dead, dying, and declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail. Use of this procedure is time-limited, and is expected to end in late 2016.

Second Patrols are often identified with the label Catastrophic Event Memorandum Account (CEMA) as this is how Second Patrol Projects are distinguished in the VM Back Office software system and in all Vegetation Management Database (VMD) and Project Management Database (PMD) records and reports. The term "Second Patrol" is preferred and is used in this document.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management governance and support personnel

Vegetation management operations personnel – North and South

Vegetation management Second Patrols - PI and TC contractors

SAFETY

NA

BEFORE YOU START

1. REVIEW the Definitions Section in this document.
2. REVIEW the following VM documents:
 - VM Environmental Best Management Practices (BMPs), posted on the VM shared drive at:
[VM\VMShared\Environmental](#)
 - Avoidance and Minimization Measures (AMMs) specific to your location.
 - [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#)
 - When inspecting transmission with underbuilt, [TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure"](#)



Vegetation Management 2016 Second Patrol - Practices

3. REVIEW the following procedures:

[TD-7102P-01, "Distribution Routine Patrol Procedure"](#)

[TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)

[TD-7102P-06, "Vegetation Management Mapping Procedure"](#)

[TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)

[TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)

[TD-7102P-16, "VM Riparian Review Procedure"](#)

[TD-7102P-16-JA01, "Identifying Riparian Areas"](#)

[TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#)

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Vegetation Management 2016 Second Patrol - Practices

PROCEDURE STEPS

NOTE

The consulting utility forester (CUF) and/or senior consulting utility forester (SCUF), collectively referred to as pre-inspector (PI), performs all steps in the Procedure Step section unless stated otherwise.

1 General Requirements

1.1 FOLLOW all "VM Environmental Best Management Practices (BMPs); find this document on the shared drive at: [VM\VMShared\Environmental](#)

1.2 FOLLOW all "Avoidance and Minimization Measures (AMMs)" specific to your location.

2 Prepare for Second Patrol Work

2.1 Second Patrol senior consulting utility forester (SCUF)/ lead OBTAINS copy of Second Patrol / CEMA project schedule from Project Management Database (PMD).

2.2 Second Patrol SCUF IDENTIFIES project AND CONTACTS Second Patrol data management specialist (DMS) to send "start of project" email to local vegetation management (VM) resources (vegetation program manager (VPM) and local SCUF).

2.3 Second Patrol SCUF RESEARCHES, COMPILES, and PROVIDES the following project information to the PI:

1. Circuit name and project number
2. Number range for Location Route Number
3. Copy of line section / circuit map from local area DMS / SCUF
4. PI Tree Inspection Safety Report
5. Ownership issues
6. Agency issues
7. Customer issues
8. Municipal and/or local ordinances
9. Endangered species and/or other environmental issues, such as Limited Operating Periods (LOPs)

Vegetation Management 2016 Second Patrol - Practices

- 2.4 During project preparation, with input from local VM resources AND for specified areas where there might be environmental concerns, PI REQUESTS a review of the California Natural Diversity Database (CNDDB) AND IDENTIFIES environmental concerns.
- 2.5 IF PI needs to view the project area before proceeding,
THEN PI CONDUCTS a quick drive through.
- 2.6 SCUF REVIEWS project circuit map and ASSIGNS project for patrol.
- 2.7 When determined necessary, PI CONTACTS the Second Patrol project forester to identify projects and prescriptions AND to DISCUSS field conditions and trees that are not addressed in [TD-7102P-22, "Veg Mgmt 2016 Second Patrol - Scope of Work."](#)

3 Create a Read-Only Packet in VMD

NOTE

Second Patrol SCUF may assign inspectors **read-only** routine maintenance pre-load packets for each project.

- 3.1 If needed, SCUF FOLLOWS the instructions below to create a read-only packet.
 1. NAVIGATE to the Vegetation Management Website.



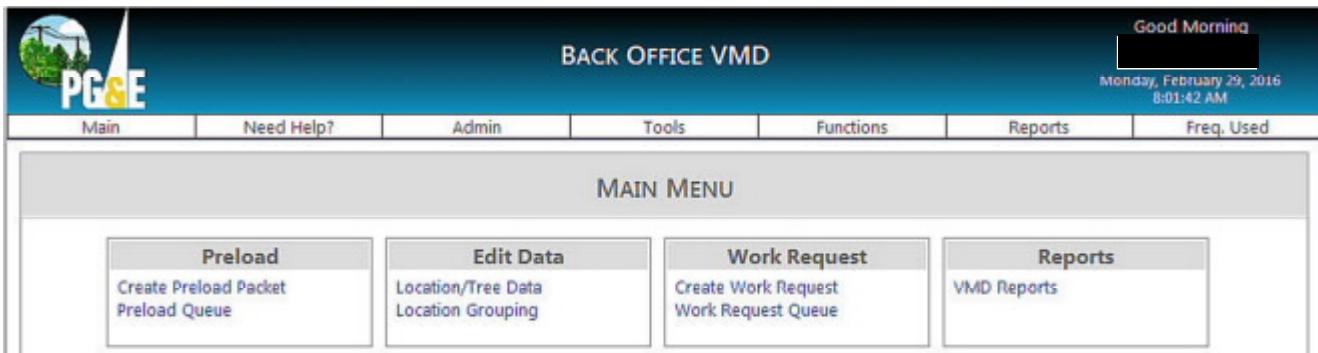
2. In the Functions section, CLICK on **Back Office VMD**.



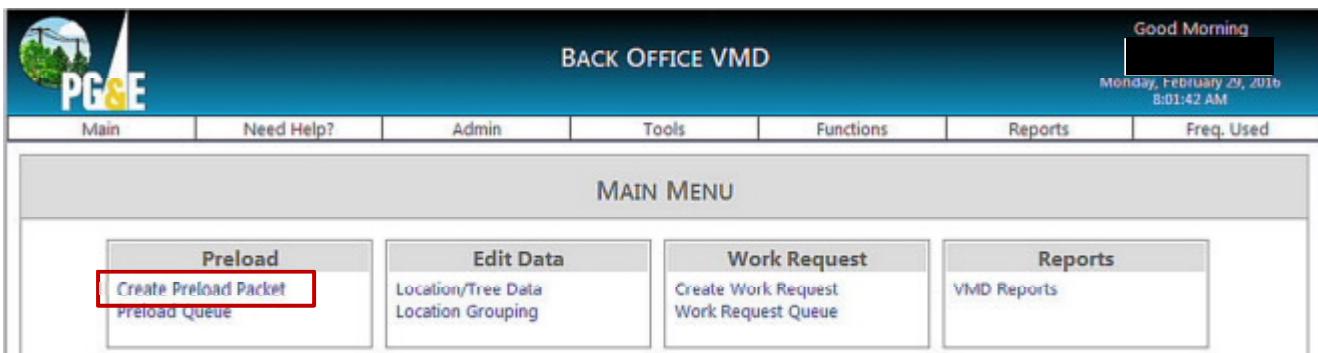
The Back Office VMD Main Menu screen appears.

Vegetation Management 2016 Second Patrol - Practices

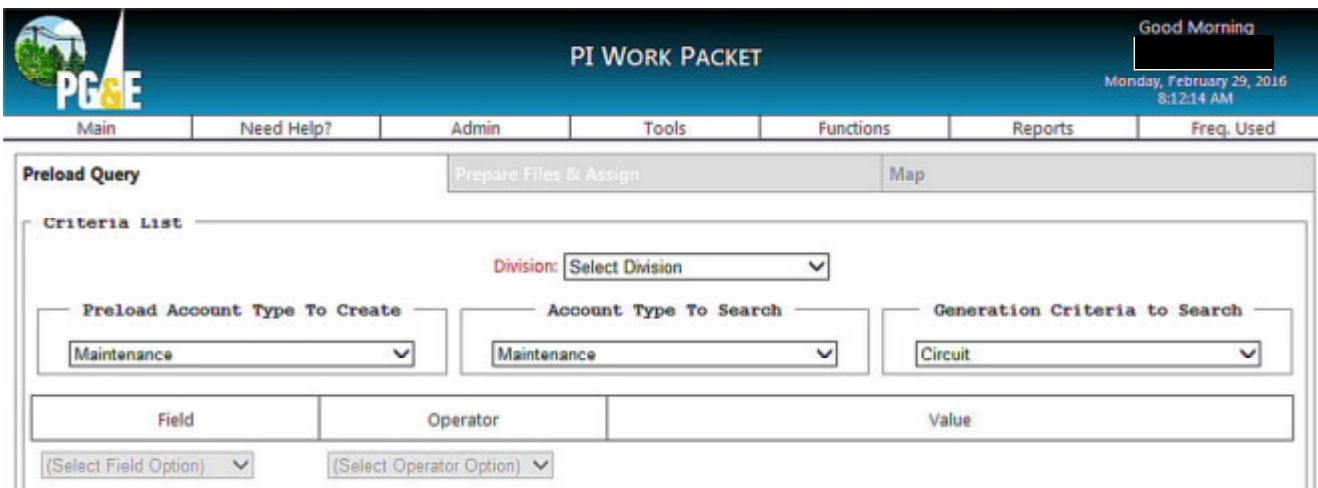
3.1, Substep 2. (continued)



3. In the Back Office VMD Main Menu, CLICK on **Create Preload Packet**.



The PI Work Packet – Pre-Load Query screen appears.

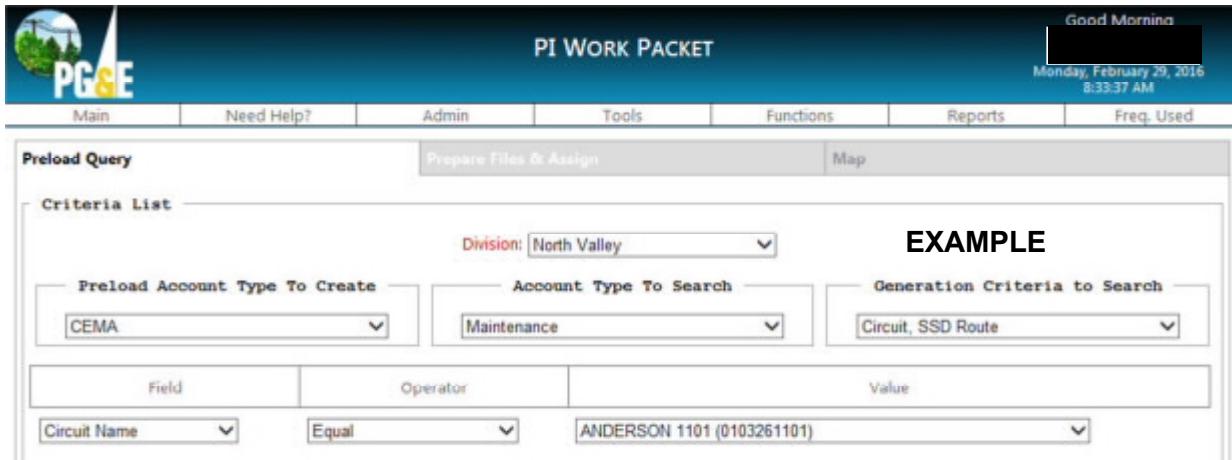


Vegetation Management 2016 Second Patrol - Practices

3.1 (continued)

4. In the PI Work Packet screen, CREATE the preload packet as follows:
 - a. For **Division**, SELECT the appropriate division.
 - b. Under **Preload Account Type to Create**, SELECT **CEMA**.
 - c. Under **Account Type to Search**, SELECT **Maintenance**.
 - d. Under **Generation Criteria to Search**, SELECT **Circuit, SSD Route**.
 - e. In the **Field** column, from the first **Select Field Option** pull-down menu, SELECT **Circuit Name**.

The following picture is an example only:

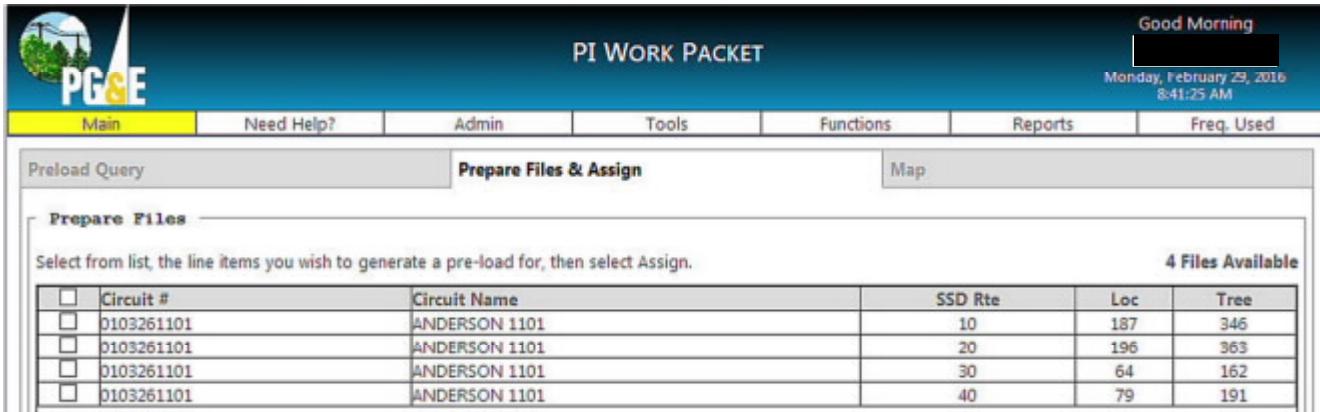


- f. At bottom of the PI Work Packet screen, CLICK on the **Run Query** button to run the query.

The results of the query appear.

Vegetation Management 2016 Second Patrol - Practices

3.1, Substep 4 f. (continued)



PI WORK PACKET

Good Morning [REDACTED]

Monday, February 29, 2016
8:41:25 AM

Main Need Help? Admin Tools Functions Reports Freq. Used

Preload Query Prepare Files & Assign Map

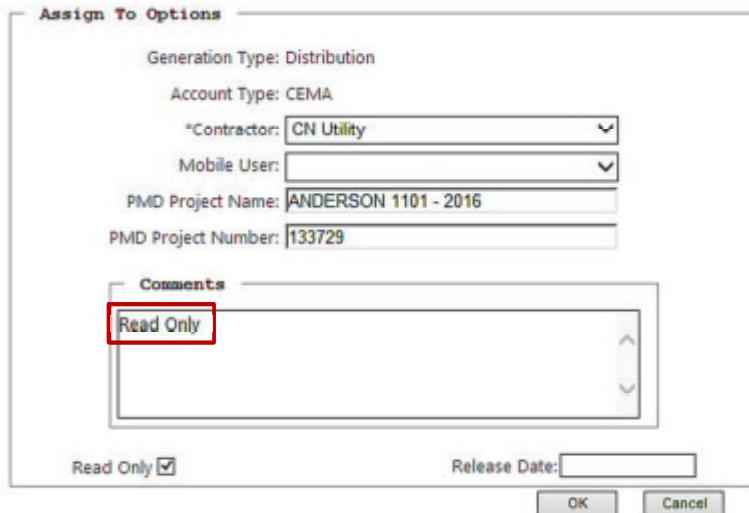
Prepare Files

Select from list, the line items you wish to generate a pre-load for, then select Assign. 4 Files Available

| Circuit # | Circuit Name | SSD Rte | Loc | Tree |
|------------|---------------|---------|-----|------|
| 0103261101 | ANDERSON 1101 | 10 | 187 | 346 |
| 0103261101 | ANDERSON 1101 | 20 | 196 | 363 |
| 0103261101 | ANDERSON 1101 | 30 | 64 | 162 |
| 0103261101 | ANDERSON 1101 | 40 | 79 | 191 |

5. CHECK the circuits and routes you want to assign, AND CLICK on the **Assign** button at the bottom of the window.

The Assign To Options window pops up.



Assign To Options

Generation Type: Distribution

Account Type: CEMA

*Contractor: CN Utility

Mobile User:

PMD Project Name: ANDERSON 1101 - 2016

PMD Project Number: 133729

Comments

Read Only

Read Only Release Date: []

OK Cancel

6. In the Assign To Options window, ASSIGN options as follows:

- For **Contractor**, SELECT the Contractor.
- For **Mobile User**, SELECT the consulting utility forester (CUF).
- CLICK within the **PMD Project Name** field to display a drop-down list AND SELECT the desired project name.
The system automatically fills in the PMD Project Number field.
- In the **Comments** field, TYPE "Read Only" as shown above.

Vegetation Management 2016 Second Patrol - Practices

3.1 (continued)



To prevent edits to routine maintenance records, the “Read Only” box **must** be checked.

7. At the bottom of the **Assign to Options** window,

a. CHECK the **Read Only** field to make the packet read only.



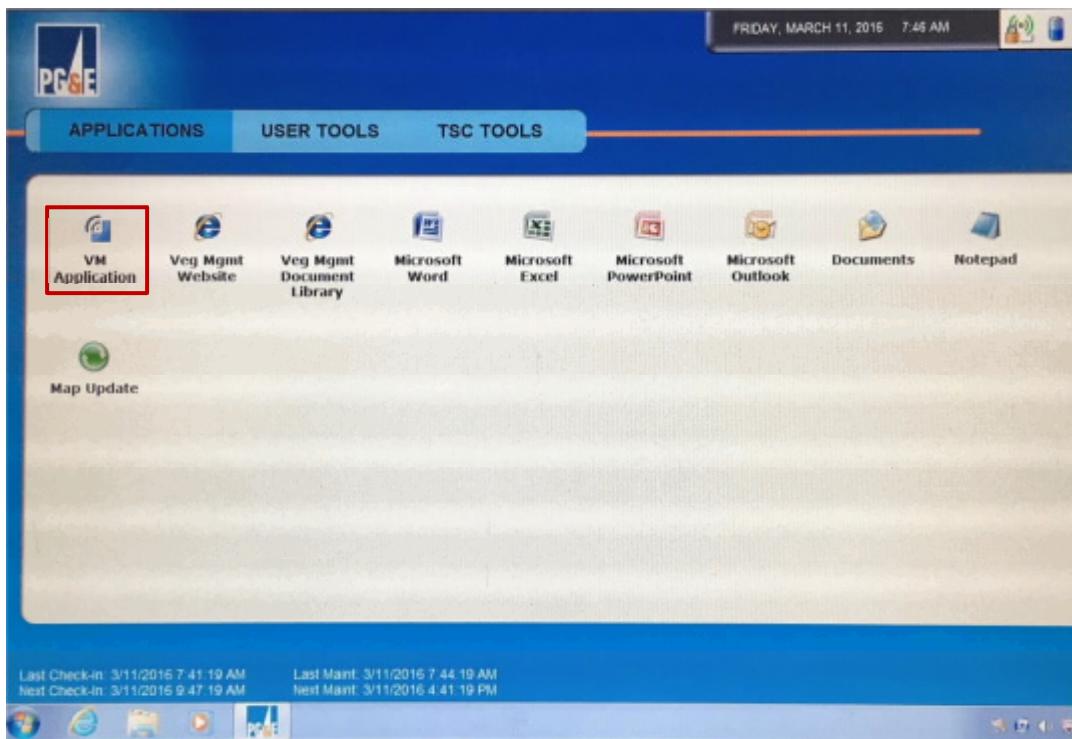
b. CLICK on the **OK** button.

Creation of the read-only packet is complete.

4 Create a New Packet on Mobile Device

4.1 CREATE a new packet for each project where work is prescribed, using the VM mobile application on a mobile device, as follows:

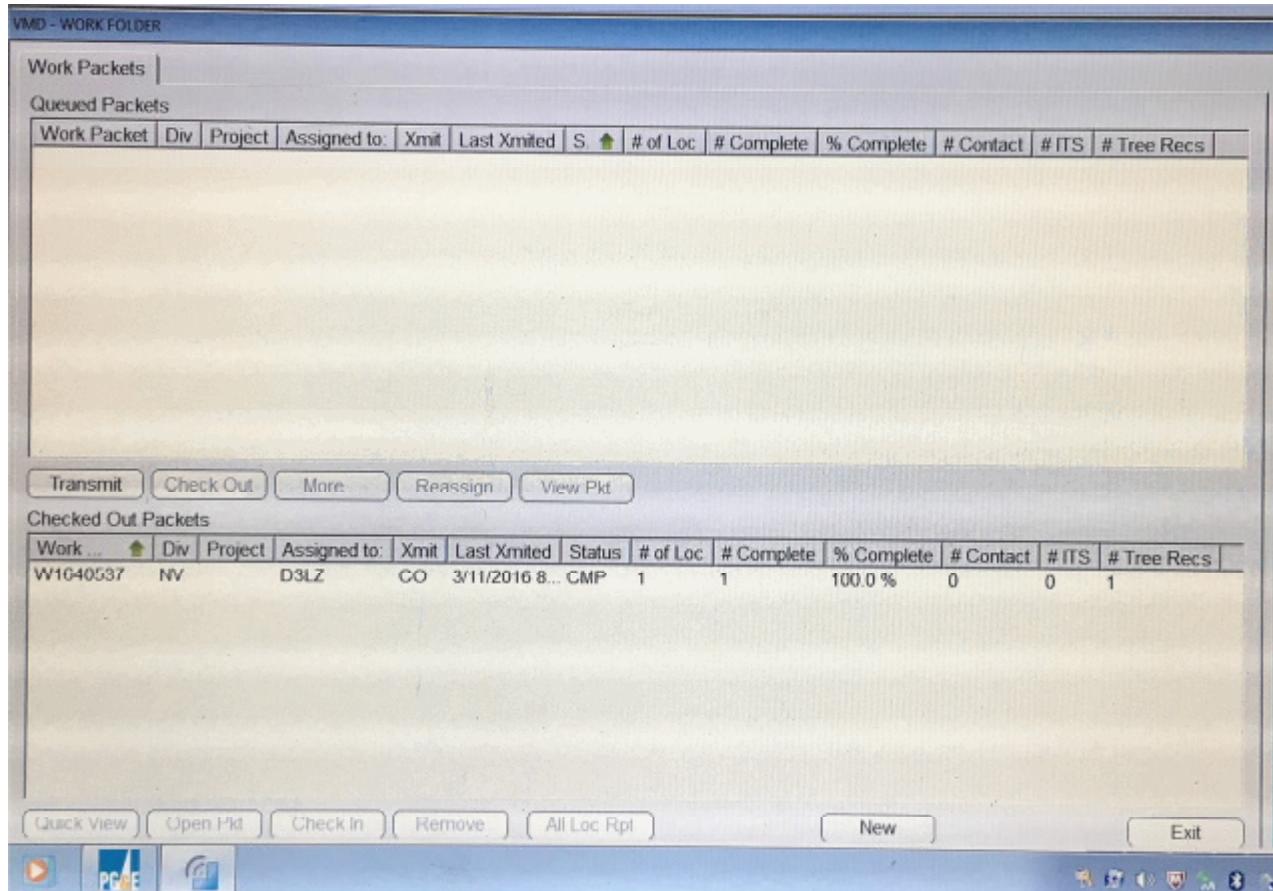
1. In the **Applications** tab, SELECT the icon for **VM Application**.



Vegetation Management 2016 Second Patrol - Practices

4.1, Substep 1. (continued)

The Work Folder screen appears.



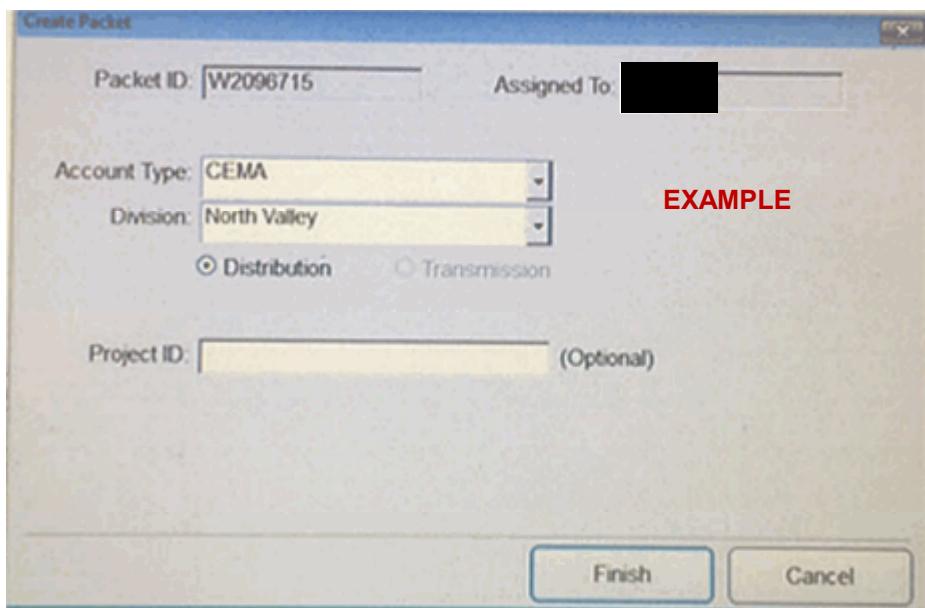
- At the bottom of the Work Folder screen, CLICK on the **New** button.



Vegetation Management 2016 Second Patrol - Practices

4.1, Substep 2. (continued)

The Create Packet folder appears. The information in the screen below is an example.



3. For the fields in the Create Packet window, do the following:
 - a. For **Account Type**, SELECT **CEMA**.
 - b. For **Division**, SELECT the division in which the work is being performed.
 - c. CLICK on the **Distribution** button.

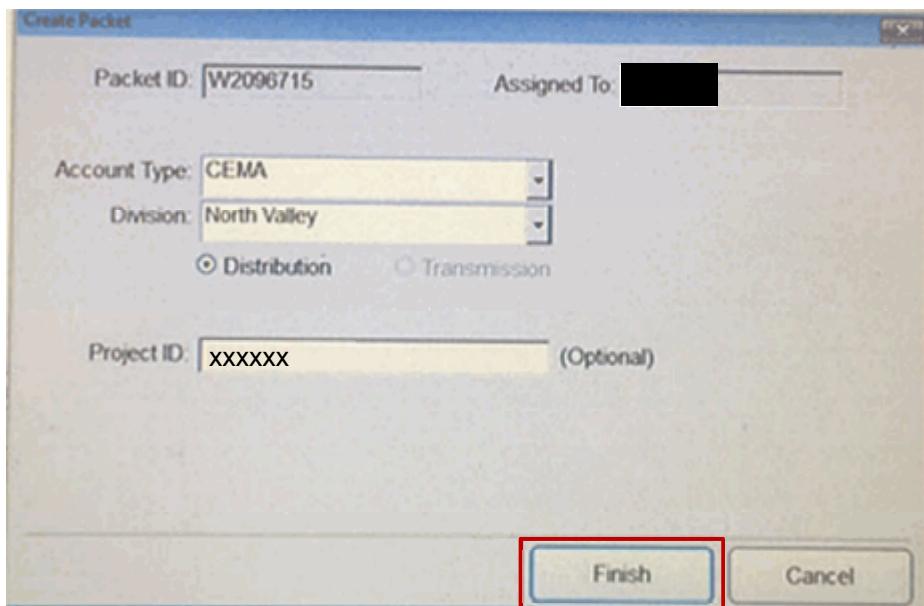
Vegetation Management 2016 Second Patrol - Practices

4.1, Substep 3. (continued)

d. For **Project ID** (required), ENTER the last 6-digits of the project ID provided by the SCUF, omitting the leading zero, and without the dash (-).

Example of proper formatting:

For a PMD project number provided by the SCUF of 0xx-xxxx, enter the project ID in the following format: xxxxxx

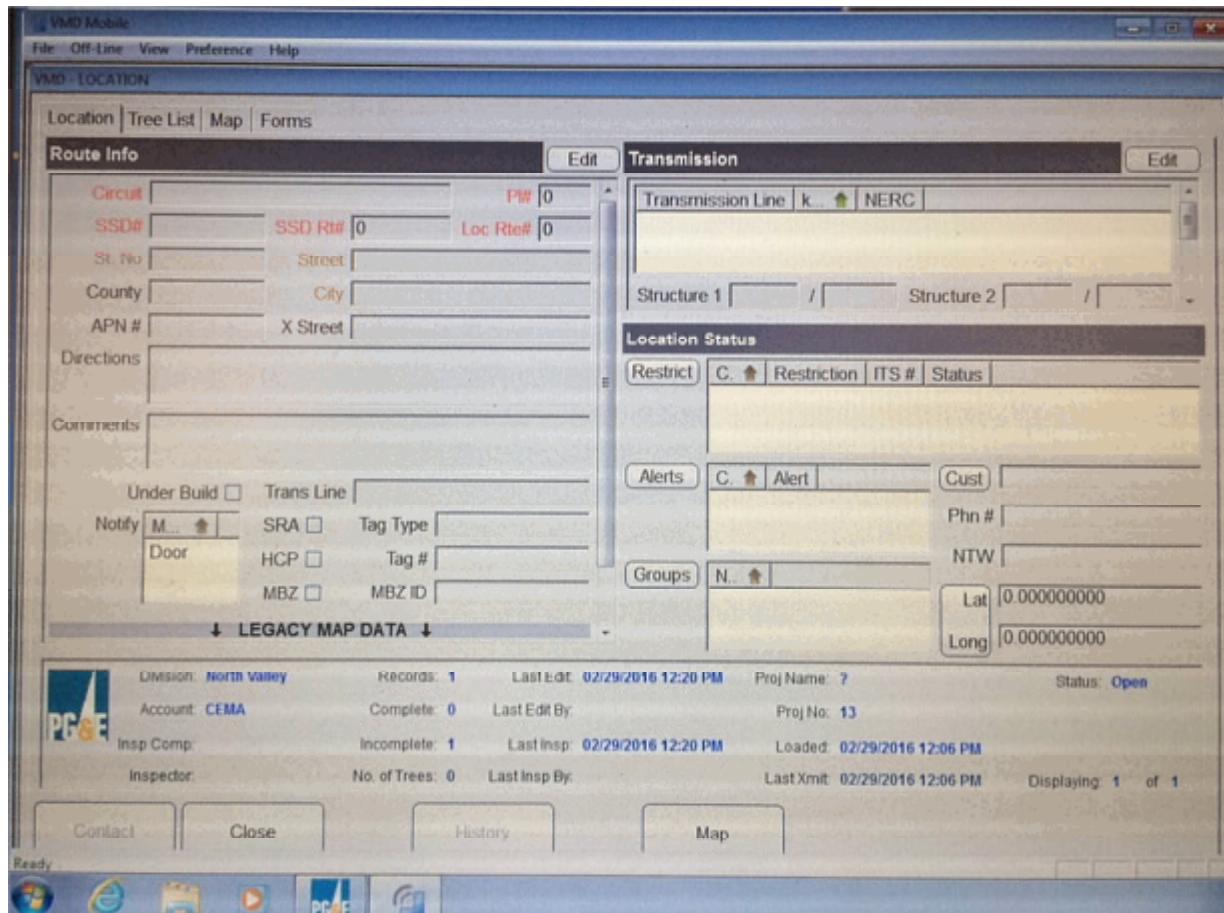


e. CLICK on the **Finish** button.

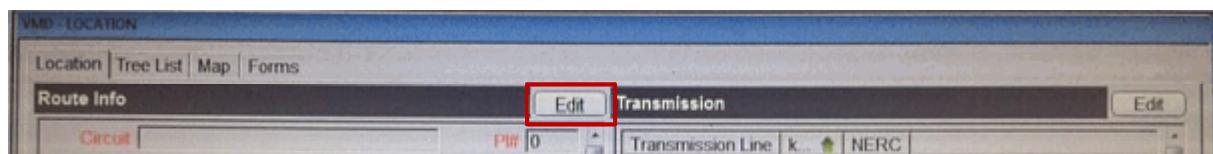
The new packet has been created, and the VMD Location screen appears.

Vegetation Management 2016 Second Patrol - Practices

5 Edit Location Route Information



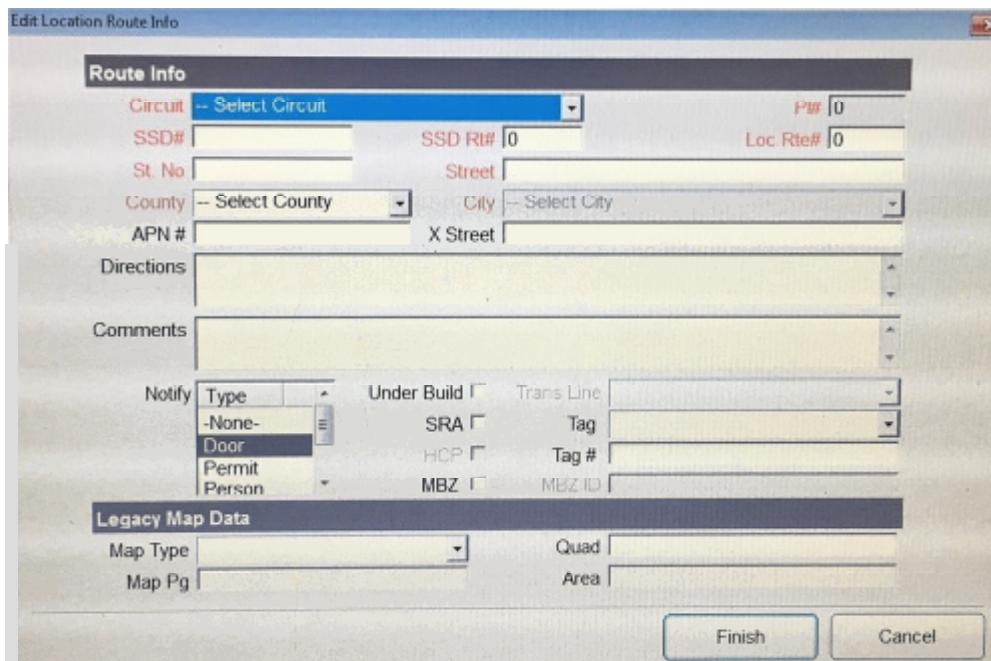
5.1 CLICK on the **Edit** button.



Vegetation Management 2016 Second Patrol - Practices

5.1 (continued)

The Edit Location Route Info window appears.



5.2 EDIT the location route information as shown below to indicate that it is a CEMA project location:

1. For **Circuit**, SELECT the circuit that you are working on.
2. For the Source Side Route Number (**SSD #**), ENTER the source side device (SSD) on which the project is located.
3. For Source Side Route Number (**SSD Rt#**), ENTER **606060** to ensure that a single work request is created for all locations.
4. For Location Route Number (**Loc Rt#**), start by ENTERING the first number from the number range assigned by SCUF to the first location, and INCREMENT each subsequent location number by 10.

For example: If the SCUF assigned the range of 210 to 300, then use 210 first, followed by 220, then 230, etc.

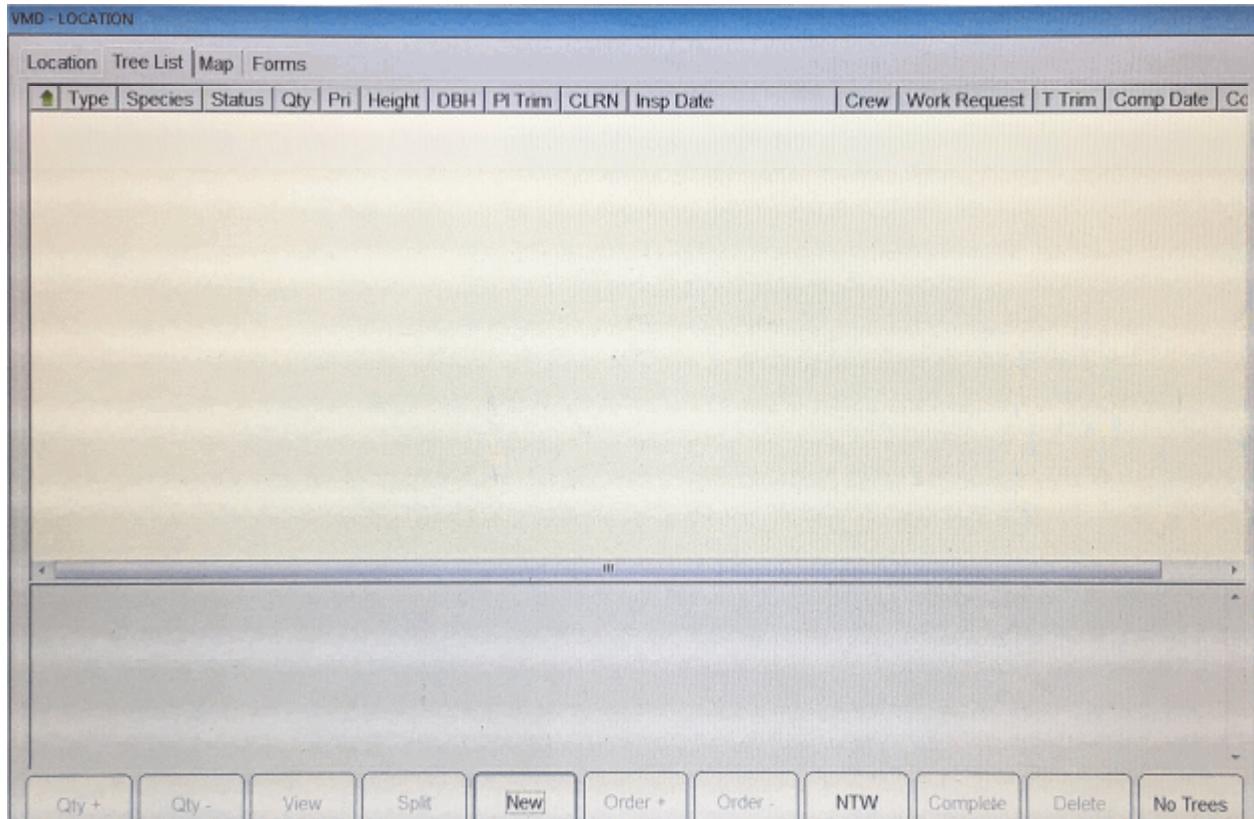
5. Leave the Tag Type and Tag Number (Tag #) fields blank. (These fields are not used since account type is CEMA.)
6. Click on the **Finish** button.



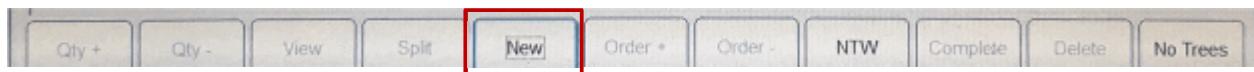
Vegetation Management 2016 Second Patrol - Practices

6 Enter Tree Data

6.1 To enter tree data in the VMD Location screen, CLICK on the **Tree List** tab at the top of the screen.



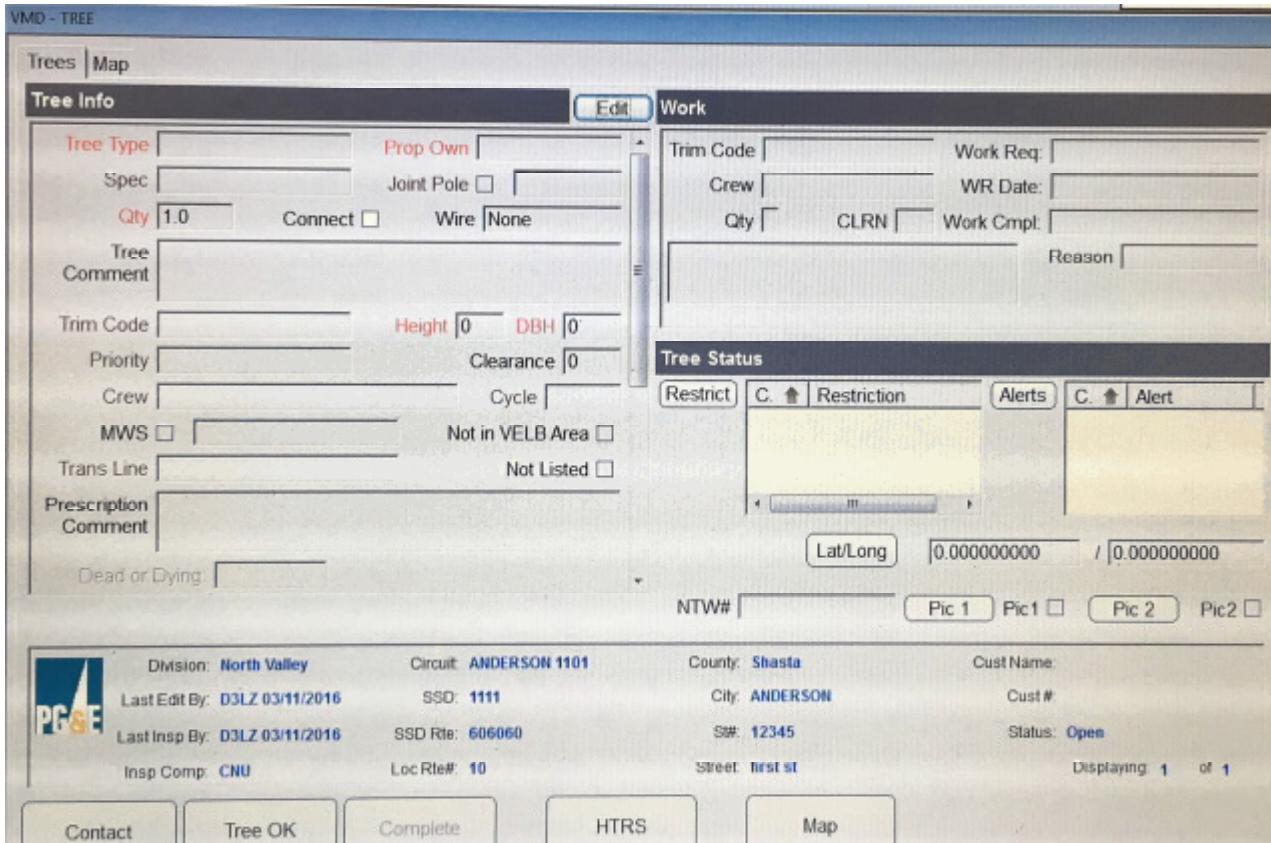
6.2 CLICK on the **New** button at the bottom of the page.



Vegetation Management 2016 Second Patrol - Practices

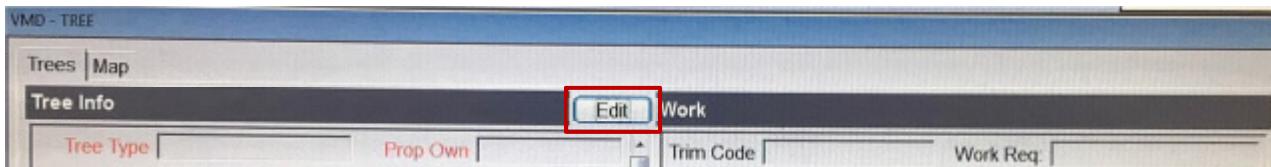
6.2 (continued)

The VMD - Tree window appears.



The screenshot shows the 'VMD - TREE' application window. The 'Edit' button in the 'Tree Info' tab is highlighted with a red box. The 'Tree Info' tab is active, displaying fields for Tree Type, Prop Own, Qty (1.0), Connect, Wire, Tree Comment, Trim Code, Height, DBH, Priority, Clearance, Crew, Cycle, MWS, Not in VELB Area, Trans Line, Not Listed, Prescription Comment, and Dead or Dying. The 'Work' tab is also visible, showing fields for Trim Code, Work Req, Crew, WR Date, Qty, CLRN, Work Cmpl, and Reason. The 'Tree Status' tab shows restriction and alert status. At the bottom, there are buttons for Contact, Tree OK, Complete, HTRS, and Map, along with a summary of division, circuit, county, and customer information.

6.3 CLICK on the **Edit** button.

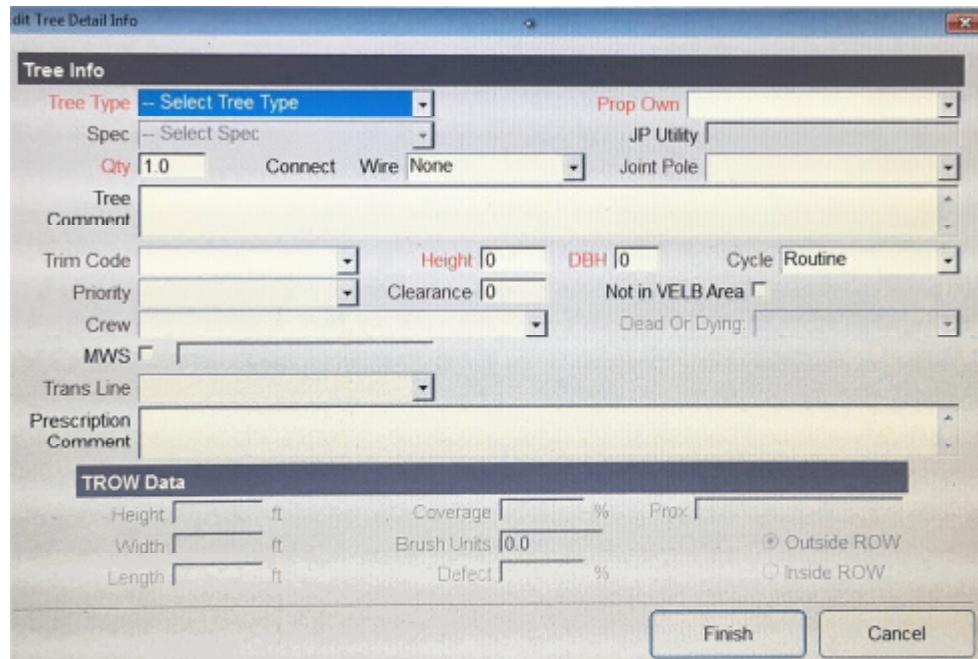


The screenshot shows the 'VMD - TREE' application window with the 'Edit' button in the 'Tree Info' tab highlighted with a red box. The 'Tree Info' tab is active, showing fields for Tree Type, Prop Own, Trim Code, and Work Req. The 'Work' tab is also visible.

Vegetation Management 2016 Second Patrol - Practices

6.3 (continued)

The Edit Tree Detail Info window appears.



6.4 In the Edit Tree Detail Info window enter the following information:

1. For **Tree Type**, SELECT from the drop down list.
2. For **Species**, SELECT from the drop down list.
3. For **Property Owner**, SELECT from the dropdown list.
4. For **Quantity**: ENTER the number of trees.
5. For **Joint Pole**, SELECT from the drop down list.
6. For **Tree Comments**, ENTER directions for where trees are located
7. For **Trim Code**, SELECT from the drop down list.
8. For **Height**, ENTER the height in feet.
9. For **DBH**, ENTER the diameter in inches.
10. For **Clearance**, ENTER **0** (zero) for all removals OR specify clearance for trims.
11. For **Priority**, SELECT **Routine**.

Vegetation Management 2016 Second Patrol - Practices

6.4 (continued)

12. For **Cycle**, SELECT 4.1, Substep.
13. For **Crew**, ENTER the crew type.
14. CLICK on the **Finish** button.

7 General Practices

NOTE

Providing specific instruction is significant for project work since it is very different from routine work; do **not** assume the tree crew knows exactly how the tree / area should be worked.

- 7.1 Provide tree crews with specific instructions to achieve desired outcome.
- 7.2 BASE prescribed work on targeted prescriptions for Second Patrols, unless approved by the Second Patrol Contact Forester.
- 7.3 BASE individual tree prescriptions on the [TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#) and routine listing practices.
- 7.4 For work that falls under routine maintenance, RECORD collected data on a separate Location Record on the mobile device.
 1. IF you are **not** using a mobile device,
THEN RECORD collected data on a Field Form.
- 7.5 CLASSIFY all routine work identified during a Second Patrol as "Missed Tree" tag.
- 7.6 NOTIFY Second Patrol DMS of missed tree tags.
- 7.7 Second Patrol DMS NOTIFIES the local area DMS that routine tags have been created and uploaded to the system.
- 7.8 IF a Hazard Notification (HN) location is identified,
THEN PI FOLLOWS the existing [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#) for "out of area" personnel.
 1. PI must NOTIFY **all** of the following by phone: local area Program Manager, local SCUF, and local area DMS.
 2. For documentation purposes, PI must also NOTIFY Second Patrol DMS.

Vegetation Management 2016 Second Patrol - Practices

8 Communicate with Customer

NOTE

Customer communication and education is crucial to the success of Second Patrol projects.

- 8.1 MAKE every effort to CONTACT the customer, AND to clearly EXPLAIN the scope of work being prescribed, including the scope of clean up and the amount of debris likely to be left behind.
- 8.2 Whenever possible, OBTAIN a signed Notification of Tree Work (NTW) Form from the property owner for heavy trimming and removal work.
 - 1. If needed, CONTACT the designated local SCUF for guidance.
- 8.3 IF unable to obtain the customer's signature,
THEN follow ["TD-7102P-23 Attachment 1, Customer Notification Process."](#)
- 8.4 ENTER any data that was collected on a Field Form into a mobile device
- 8.5 ENTER customer contact information for any safety issues or production impacts, such as the presence of a dog; notify first, locked gate, concerned customer alerts, and endangered species.
- 8.6 ENTER AND TRACK refusals (difficult customers) in Issue Tracking System (ITS).
 - 1. IF a customer refuses the initial prescription,
THEN Second Patrol PI may negotiate for the next best prescription that would ensure the protection of the facility.
 - 2. IF the customer refuses work entirely OR limits the work so as to severely limit results of trim,
THEN INDICATE the location as a refusal AND create an ITS record.

9 Process for Trees Outside of Second Patrol Scope

- 9.1 DOCUMENT trees identified as outside the scope of the Second Patrol (routine maintenance) during the inspection.
- 9.2 EMAIL the list of documented trees to the Second Patrol DMS, AND SUBMIT the list to local SCUF to be passed to the local VPM.
 - 1. EMAIL the observation report with a location record.

Vegetation Management 2016 Second Patrol - Practices

10 Process for Trees within Riparian Areas

- 10.1 For identifying riparian areas FOLLOW the guidelines in the job aid: [TD-7102P-16-JA01, "Identifying Riparian Areas"](#)
- 10.2 For trees within a riparian area identified as needing work, follow the [TD-7102P-16, "VM Riparian Review Procedure."](#)

NOTE

All riparian review locations are processed in the same way that routine compliance trees are processed.

- 10.3 For work identified within riparian areas, SELECT the **Riparian** alert in the Location Record and SELECT **R-Review** restriction in the Tree Record.
 1. CONTACT the local VPM for guidance on your division's practices.

11 Post Patrol and Reporting

- 11.1 On a weekly basis, the Second Patrol SCUF / Second Patrol lead CUF SUBMITS a Second Patrol Activity Summary to the Second Patrol DMS for each area. The Second Patrol summary includes:
 - Number of projects completed
 - Number of projects in progress
 - Number of trees listed for work
 - Number of hazardous notifications reported
 - Number of Abnormal Field Conditions reported
- 11.2 PI TRANSMITS collected data using mobile device at least once a day.
- 11.3 CUF COLLECTS all project documents AND SUBMIT them to the SCUF at the end of each project.
 1. SCUF NOTIFIES the Second Patrol DMS when project is complete.
- 11.4 Prior to the start of tree work, the Second Patrol tree contractor CONTACTS the Second Patrol SCUF / Second Patrol lead CUF to review project details by phone or at a field meeting (i.e., project tailboard).

Vegetation Management 2016 Second Patrol - Practices

11.5 WHEN an abnormal field condition is identified,

THEN the PI and TC do the following:

1. FOLLOW the [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)
2. NOTIFY Second Patrol DMS by the end of the working day of abnormal field conditions reported, for example, damaged equipment.
3. EMAIL photographs of the abnormal field condition location to Second Patrol DMS at the earliest opportunity.
 - a. Photographic documentation is required for all Facility Protect Major and Facility Protect Removal work, and for all reported abnormal field condition hardware issues.
 - b. SAVE photographs on the VM shared drive at:
[VMShared\2nd PATROL 2016\2nd Patrol Pictures](#)
 - c. SAVE files (photos) as jpeg in the following format, separated by underscores:
Div_CircuitName_LOC#_DateTaken_Issue
Where:
Div is the two-character division code
CircuitName is the name of the circuit
LOC# is the location number where the picture was taken
DateTaken is the date the picture was taken
Example: YO_Bearvalley2105a_10_2015June1_deadpine.jpeg
 - d. PROVIDE a brief description of the issue type.
4. SAVE photos consistent with the directions above, except USE HR for Hardware Report, as abnormal condition reports do not have a location number.
Example: FR_Sandcreek1103_HR_2015June1_floatingconductor.jpeg

Vegetation Management 2016 Second Patrol - Practices

12 Complete Project

12.1 WHEN a project is complete,

THEN do the following:

1. SEND a completion email to the Second Patrol DMS.
2. RETURN the project folders to the Second Patrol DMS (via company mail) with all reports, notes, and other relevant documentation, where documents must include, but are not limited to:
 - Highlighted and signed maps by the CUF and SCUF as per [TD-7102P-06, "Vegetation Management Mapping Procedure"](#)
 - Original signed NTWs
 - Original refusal forms, if applicable
 - Additional permits (e.g., CalTrans paperwork, city/county encroachment permits)
 - Correspondence with the customer

13 Process for Refusals

13.1 IDENTIFY dead or otherwise hazardous trees under mandated regulatory compliance.

1. IF a refusal goes unresolved,

THEN FOLLOW the routine work procedure [TD-7102P-04, "Distribution Vegetation Refusal Procedure."](#)

2. IF a property owner refuses Second Patrol work,

THEN FOLLOW these steps:

- a. ENTER tree prescriptions into a mobile device AND MARK location as "Refusal."
- b. The local lead or refusal specialist ATTEMPTS to make a second contact to resolve the refusal.
- c. IF the refusal remains unresolved,

THEN PASS the refusal to the designated Second Patrol SCUF or Second Patrol contract forester for further action.

Vegetation Management 2016 Second Patrol - Practices

13.1 (continued)

3. Non-Contact Refusals

- a. IF PI is **not** able to contact the customer within three (3) days,
THEN FOLLOW the Customer Impact process,
AND PROVIDE required photographs for the Customer Impact process.

END of Instructions

DEFINITIONS

VM Back Office

VM Back Office is a web-based software system that includes the Vegetation Management Database (VMD) and the Project Management Database (PMD).

Second Patrol Projects

Second Patrol Projects address only dead, dying, and declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail; Second Patrol Projects do **not** address tree growth.

IMPLEMENTATION RESPONSIBILITIES

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

The vegetation management operations group is responsible for the distribution of this procedure by providing training and conducting regular reviews.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)



Vegetation Management 2016 Second Patrol - Practices

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7102P-01, "Distribution Routine Patrol Procedure"](#)

[TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)

[TD-7102P-06, "Vegetation Management Mapping Procedure"](#)

[TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)

[TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)

[TD-7102P-16, "VM Riparian Review Procedure"](#)

[TD-7102P-16-JA01, "Identifying Riparian Areas"](#)

[TD-7102P-22, "Veg Mgmt 2016 Second Patrol - Scope of Work"](#)

[TD-7102P-23, "Attachment 1, Customer Notification Process"](#)

[TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#)

APPENDICES

NA

ATTACHMENTS

NA

DOCUMENT REVISION

NA

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management

[REDACTED], Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager



Vegetation Management 2016 Second Patrol - Practices

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager

[REDACTED], Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|--------|-------------------------|
| NA | This is a new document. |

EXHIBIT H-18-2

Vegetation Management Second Patrol - Practices

SUMMARY

This procedure provides guidance for patrol practices for pre-inspector (PI) and tree crew (TC) patrols associated with the Second Patrol.

This procedure is intended for use on those projects identified and assigned by the PG&E Representative as Second Patrol Projects to address only dead, dying, and declining trees, or dead portions of trees including dead overhangs, that have the ability to contact PG&E facilities in the event that they fail.

Second Patrols are often identified with the label Catastrophic Event Memorandum Account (CEMA) as this is how Second Patrol Projects are distinguished in the VM Back Office software system and in all Vegetation Management Database (VMD) and Project Management Database (PMD) records and reports. The term "Second Patrol" is preferred and is used in this document.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management governance and support personnel

Vegetation management operations personnel – North and South

Vegetation management Second Patrols - PI and TC contractors

SAFETY

NA

BEFORE YOU START

1. REVIEW the Definitions Section in this document.
2. REVIEW the following VM documents:
 - VM Environmental Best Management Practices (BMPs), posted on the VM shared drive at:
[VM\VMShared\Environmental](#)
 - Avoidance and Minimization Measures (AMMs) specific to your location.
 - [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#)
 - When inspecting transmission with underbuilt, [TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure"](#)



Vegetation Management Second Patrol - Practices

3. REVIEW the following procedures:

- [TD-7102P-01, "Distribution Routine Patrol Procedure"](#)
- [TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)
- [TD-7102P-06, "Vegetation Management Mapping Procedure"](#)
- [TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)
- [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)
- [TD-7102P-16, "VM Riparian Review Procedure"](#)
- [TD-7102P-16-JA01, "Identifying Riparian Areas"](#)
- [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#)

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Vegetation Management Second Patrol - Practices

PROCEDURE STEPS

1 General Requirements

1.1 FOLLOW all "VM Environmental Best Management Practices (BMPs); find this document on the shared drive at: [VM\VMShared\Environmental](#)

1.2 FOLLOW all "Avoidance and Minimization Measures (AMMs)" specific to your location.

2 Prepare for Second Patrol Work

2.1 Second Patrol senior consulting utility forester (SCUF) OBTAINS copy of Second Patrol / CEMA project schedule from Project Management Database (PMD).

2.2 Second Patrol SCUF IDENTIFIES project AND CONTACTS Second Patrol data management specialist (DMS, local VPM and SCUF, CEMA VPM and CF) to send "start of project" email to local vegetation management (VM) resources (vegetation program manager (VPM) and local SCUF).

2.3 SCUF CREATES a VMD Locations Report for locations where trees are marked for mitigation but still standing, as follows:

1. In the VMD LOCATIONS REPORT, USES Advanced Search and SELECTS:

- Division
- Account type **maintenance**
- Circuit Name
- SSD RT #
- Trim Type **IN LIST = ALL FP CODES**

2. SELECTS VMD Locations.

3. SELECTS **RUN**.

2.4 Second Patrol SCUF RESEARCHES, COMPILES, and PROVIDES the following project information to the PI:

1. Circuit name and project number
2. Number range for Location Route Number
3. Copy of line section / circuit map from local area DMS / SCUF

Vegetation Management Second Patrol - Practices

2.4 (continued)

4. VMD Locations Report of previous First Patrol FP work
5. PI Tree Inspection Safety Report
6. Ownership issues
7. Agency issues
8. Customer issues
9. Municipal and/or local ordinances
10. Environmental issues, such as Limited Operating Periods (LOPs) and FERC areas

2.5 SCUF ASSIGNS project for patrol.

2.6 The CUF USES this Locations Report information as verification that the marked trees still standing are listed on a work request.

3 Create a Read-Only Packet in VMD

NOTE

Second Patrol SCUF may assign CUF **read-only** routine maintenance pre-load packets for each project.

3.1 If needed, SCUF **FOLLOWS** the instructions below to create a read-only packet.

1. NAVIGATE to the Vegetation Management Website.
2. In the **Functions** section, CLICK on **Back Office VMD**.
The Back Office VMD Main Menu screen appears.
3. In the Back Office VMD Main Menu, CLICK on **Create Preload Packet**.
The PI Work Packet – Pre-Load Query screen appears.

Vegetation Management Second Patrol - Practices

3.1 (continued)

4. In the PI Work Packet screen, CREATE the preload packet as follows:
 - a. For **Division**, SELECT the appropriate division.
 - b. Under **Preload Account Type to Create**, SELECT **CEMA**.
 - c. Under **Account Type to Search**, SELECT **Maintenance**.
 - d. Under **Generation Criteria to Search**, SELECT **Circuit, SSD Route**.
 - e. In the **Field** column, from the first **Select Field Option** pull-down menu, SELECT **Circuit Name**.
 - f. At bottom of the PI Work Packet screen, CLICK on the **Run Query** button to run the query.

The results of the query appear.

5. CHECK the circuits and routes you want to assign, AND CLICK on the **Assign** button at the bottom of the window.

The Assign To Options window pops up.

6. In the Assign To Options window, ASSIGN options as follows:
 - a. For **Contractor**, SELECT the Contractor.
 - b. For **Mobile User**, SELECT the consulting utility forester (CUF).
 - c. CLICK within the **PMD Project Name** field to display a drop-down list AND SELECT the desired project name.

The system automatically fills in the PMD Project Number field.

 - d. In the **Comments** field, TYPE "Read Only."



CAUTION

To prevent edits to routine maintenance records, the **Read Only** box **must** be checked.

7. At the bottom of the **Assign to Options** window,
 - a. CHECK the **Read Only** field to make the packet read only.
 - b. CLICK on the **OK** button.

Creation of the read-only packet is complete.

Vegetation Management Second Patrol - Practices

4 PI Creates New Packet on Mobile Device

4.1 CREATE a new packet for each project where work is prescribed, using the VM mobile application on a mobile device, as follows:

1. In the **Applications** tab, SELECT the icon for **VM Application**.

The Work Folder screen appears.

2. At the bottom of the Work Folder screen, CLICK on the **New** button.

The Create Packet folder appears.

3. For the fields in the Create Packet window, do the following:

- a. For **Account Type**, SELECT **CEMA**.

- b. For **Division**, SELECT the division in which the work is being performed.

- c. CLICK on the **Distribution** button.

- d. For **Project ID** (required), ENTER the last 6-digits of the project ID provided by the SCUF, omitting the leading zero, and without the dash (-).

Example of proper formatting:

For a PMD project number provided by the SCUF of 0xx-xxxx, enter the project ID in the following format: xxxxxx

- e. CLICK on the **Finish** button.

The new packet has been created, and the VMD Location screen appears.

5 PI Edits Location Route Information

5.1 CLICK on the **Edit** button.

The Edit Location Route Info window appears.

5.2 EDIT the location route information as shown below to indicate that it is a CEMA project location:

1. For **Circuit**, SELECT the circuit that you are working on.

2. For the Source Side Route Number (**SSD #**), ENTER the source side device (SSD) on which the project is located.

3. For Source Side Route Number (**SSD Rt#**), ENTER **606060** to ensure that a single work request is created for all locations.

Vegetation Management Second Patrol - Practices

5.2 (continued)

4. For Location Route Number (**Loc Rt#**), start by ENTERING the first number from the number range assigned by SCUF to the first location, and INCREMENT each subsequent location number by 10.

For example: If the SCUF assigned the range of 210 to 300, then use 210 first, followed by 220, then 230, etc.

NOTE

The **Tag Type** and Tag Number (**Tag #**) fields are not used since account type is CEMA.

5. LEAVE the **Tag Type** and Tag Number (**Tag #**) fields blank, unless routine compliance work is identified (trees are at or approaching non-compliance at the time of observation, with **Missed Tree** tag entered on mobile device).
6. Click on the **Finish** button.

6 PI Enters Tree Data

- 6.1 To enter tree data in the VMD Location screen, CLICK on the **Tree List** tab at the top of the screen.
- 6.2 CLICK on the **New** button at the bottom of the page.
The VMD - Tree window appears.
- 6.3 CLICK on the **Edit** button.
The Edit Tree Detail Info window appears.
- 6.4 In the Edit Tree Detail Info window, enter the following information:
 1. For **Tree Type**, SELECT from the drop down list.
 2. For **Species**, SELECT from the drop down list.
 3. For **Property Owner**, SELECT from the dropdown list.
 4. For **Quantity**: ENTER the number of trees.
 5. For **Joint Pole**, SELECT from the drop down list.
 6. For **Tree Comments**, ENTER where the trees are located and specific instructions about how the tree/area should be worked.

Vegetation Management Second Patrol - Practices

6.4 (continued)

7. For **Trim Code**, SELECT from the drop down list and base the individual tree prescriptions on the [TD-7102P-08, "Facility Protect and Work Difficulty Procedure."](#)
8. For **Height**, ENTER the height in feet.
9. For **DBH**, ENTER the diameter in inches.
10. For **Clearance**, ENTER **0** (zero) for all removals OR specify clearance for trims.
11. For **Priority**, SELECT **Routine**.
12. For **Cycle**, SELECT ROUTINE.
13. For **Crew**, ENTER the crew type.
14. CLICK on the **Finish** button.

7 PI Communicates with Customer

NOTE

Customer communication and education is crucial to the success of Second Patrol projects.

- 7.1 ATTEMPT to CONTACT the customer, AND to clearly EXPLAIN the scope of work being prescribed, including the scope of clean up and the amount of debris likely to be left behind.
- 7.2 Whenever possible, OBTAIN a signed Notification of Tree Work (NTW) Form from the property owner for heavy trimming and removal work.

NOTE

All non-contact refusals (absent land owner locations) require photographs of the dead/dying tree canopy to be mitigated.

- 7.3 IF PI is **not** able to contact the customer after three (3) documented attempts, within five (5) business days,
 THEN FOLLOW [TD-7102P-23, Attachment 1, "Customer Notification Process"](#),
 AND PROVIDE required photographs for the Customer Impact process.
- 7.4 ENTER customer contact information for any safety issues or production impacts, such as the presence of a dog; notify first, locked gate, and concerned customer alerts.



Vegetation Management Second Patrol - Practices

8 PI Processes Refusals

8.1 IF a customer refuses the initial prescription,
 THEN Second Patrol PI may NEGOTIATE for the next best prescription that would ensure the protection of the facility.

8.2 IF the customer refuses work entirely OR limits the work so as to severely limit results of trim,
 THEN

1. INDICATE the location as a refusal AND create an ITS record.
2. FOLLOW the routine work procedure [TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#) AND PERFORM the steps below:
 - a. ENTER tree prescriptions into a mobile device AND MARK location as "Refusal."
 - b. The local lead or refusal specialist ATTEMPTS to make a second contact to resolve the refusal.
 - c. IF the refusal remains unresolved,
 - d. THEN PASS the refusal to the designated Second Patrol SCUF or Second Patrol contract forester for further action.

9 PI Identifies Routine Compliance Work During Second Patrol

9.1 IDENTIFY trees that are at or approaching non-compliance at the time of observation,
 AND ENTER the routine work in mobile device as a **Missed Tree** tag as described in Step 5.25.

9.2 IDENTIFY green, significantly leaning trees with indications of basal defect or soil instability, and uprooted trees in the surrounding stand, that are likely to fail into the facilities before the next annual patrol,
 AND ENTER the routine work for these trees in mobile device as an **Unforeseen** tag.

9.3 IDENTIFY structurally unsound green limbs and dead palm fronds above the conductors with the potential to fail into the facilities before the next routine patrol, causing cross-phasing or damage, that should be managed within the routine program, not within the Second Patrol project,
 AND ENTER this routine work in mobile device as an **Unforeseen** tag.

9.4 IF a Hazard Notification (HN) location is identified,
 THEN FOLLOW the [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure."](#)

Vegetation Management Second Patrol - Practices

9.5 WHEN an abnormal field condition is identified,
THEN the PI and TC FOLLOW the [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)

9.6 Second Patrol SCUF NOTIFIES local area DMS of routine tags that have been created and uploaded to the system.

10 Process for Trees within Riparian Areas

10.1 For identifying riparian areas, PI FOLLOWS the guidelines in the job aid: [TD-7102P-16-JA01, "Identifying Riparian Areas"](#)

10.2 For trees within a riparian area identified as needing work, PI FOLLOWS [TD-7102P-16, "VM Riparian Review Procedure"](#).

11 Post Patrol and Reporting

11.1 PI TRANSMITS collected data using mobile device at least once a day.

11.2 PI COLLECTS all project documents AND SUBMITS them to the SCUF at the end of each project, AND STORES them in the circuit folder. Project documents commonly include:

- NTW
- Highlighted Ma
- Inspection Maps

12 SCUF Completes Project

12.1 WHEN a project is complete,
THEN do the following:

1. SENDS a completion email to the Second Patrol DMS, providing the following information:
 - Project Name
 - Project Number
 - Date of closing
 - Total number of units
 - Number and details of hazardous notifications reported
 - Number and details of Abnormal Field Conditions reported

Vegetation Management Second Patrol - Practices

12.1 (continued)

2. FILES the project folders in the local office with the following documentation, including, but not limited to:
 - Highlighted and signed Index and Field maps by the CUF and SCUF as per [TD-7102P-06, "Vegetation Management Mapping Procedure"](#)
 - Original signed NTWs
 - Original refusal forms, if applicable
 - Additional permits (ERTC communications, AMMs)
 - Red Flag Patrol Maps, if applicable

13 Red Flag Patrols by Contractors

13.1 Pre-Inspection (PI) Contractors

1. On Red Flag Days, the Second Patrol contract forester REQUESTS PI to patrol within the designated Red Flag areas.
2. The Second Patrol contract forester DIRECTS PI as to WHEN PI should perform patrols.
 - a. Contract forester may request patrols to be conducted outside of normal business hours depending on weather conditions and times of the Red Flag Warning.
3. WHEN Red Flag Patrols are conducted on a circuit,
 THEN PI DOCUMENTS where PI has inspected by creating a circuit map labeled "Red Flag Patrols."
 - a. PI HIGHLIGHTS, SIGNS, AND DATES the portions of line inspected on the circuit map during a Red Flag patrol.
 - b. PI RETAINS highlighted and signed patrol maps in the circuit folder, as per [TD-7102P-06, "Vegetation Management Mapping Procedure."](#)
4. IF hazardous tree conditions are found,
 THEN PI FOLLOWS [TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#) for reporting and mitigating hazards.
5. IF abnormal field conditions are found,
 THEN PI FOLLOWS the instructions in [TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)

Vegetation Management Second Patrol - Practices

13.2 Tree Contractors (TC)

1. On Red Flag Days, the Second Patrol contract forester REQUESTS TC to patrol work locations where work was performed that same day within designated Red Flag areas.
 - a. TC is required to remain at last work location completed that same day for one half hour after equipment has been shut off.
 - b. At the end of the day, TC is required to inspect for ignitions at all locations where work was completed that same day.

14 Types of Patrols

14.1 Ground Patrols

1. For projects identified as **CEMA GROUND** in PMD, PI INSPECTS only the portions of the circuit that are in State Response Areas (SRA).

14.2 Wildland Urban Interface (WUI) Patrols

1. For projects identified as CEMA WUI in PMD, PI INSPECTS only portions of the circuit that are in Local Response Areas (LRA) and within two GIS layers, WUI and Fire Hazard Severity Zone (FHSZ).
 - a. PI will use these two GIS layers to focus their inspections to these specific geographic areas.
2. PI INSPECTS all lines within the WUI layer at an interval of once per year, approximately 6 months from when routine patrol inspects the circuit.
3. PI INSPECTS all lines within the FHSZ at an interval of three (3) times per year, once during each quarter that routine does **not** inspect the circuit.



Vegetation Management Second Patrol - Practices

14.2 (continued)

4. As documentation of completed inspection, PI HIGHLIGHTS, SIGNS, AND DATES the line inspected on a circuit map that contains the WUI and FHSZ layer, as per [TD-7102P-06, "Vegetation Management Mapping Procedure."](#)

These maps are located on the VMShared drive Second Patrol folder for the current year, within a folder named Wildland Urban Interface.

- a. To view these layers on MapGuide GIS,

- (1) **SELECT Admin Boundaries.**

- Admin Boundaries
- Zip Codes
- Telco Exchange Boundaries (Apr 2016)
- Sections
- Sections (projected into Land Grants)
- Land-Grants
- Township - Range
- Township - Range (projected into Land Grants)
- Proposed Wilderness Areas (2005)
- Urbanized Areas 2010
- Non-PGE Electric Utilities Srvty (CEC 2012)
- Fire Responsibility Areas (CDF 2015)
- Fire Responsibility Areas (LRA CDF 2016)
- Silvus Labs WUI in LRA
- Interface
- Intermix

- (2) For the WUI layer, **SELECT Silvus Labs WUI in LRA.**

- (3) For the FHSZ layer, **SELECT Fire Responsibility Areas (LRA CDF 2016).**

14.3 Aerial Patrols

1. For projects identified as CEMA Aerial in PMD, PI PERFORMS the inspection of the circuit from a Helicopter. Any portion of the circuit that cannot be flown or clearly seen from the air requires PI to perform a ground patrol of that portion of line.
2. The Second Patrol contract forester COORDINATES with PI to schedule helicopter flight.
3. BEFORE leading an aerial patrol from either the front or rear seat, PI must complete the course SAFE-0256 "Flying within the Wire Environment" AND possess a current Helicopter ID card.

Vegetation Management Second Patrol - Practices

4.3 (continued)

4. BEFORE a PI may participate in an aerial patrol, PI must complete online training TECH-002 WBT "Basic Helicopter Safety."
5. During the flight, the PI is responsible for guiding the patrol AND identifying dead trees and hazardous conditions.
 - a. WHEN dead trees are identified with the potential to impact lines, THEN PI:
 - (1) CAPTURES the GPS coordinates of the location.
 - (2) HIGHLIGHTS, SIGNS, AND DATES all line segments patrolled from the air on an aerial patrol circuit map.
 - (3) As documentation of completed inspection, PI RETAINS highlighted and signed aerial patrol maps, as per [TD-7102P-06, "Vegetation Management Mapping Procedure."](#)
6. For locations identified from the air with potential tree issues, PI GROUND TRUTHS the findings by sending a CUF to field verify whether the trees meet the work scope.
 - a. PI lists for work all trees identified as meeting the work scope.
 - b. After ground truthing the locations, PI SIGNS AND DATES the map.
7. As documentation of completed inspection, PI RETAINS highlighted and signed aerial patrol maps, as per [TD-7102P-06, "Vegetation Management Mapping Procedure."](#)

END of Instructions

DEFINITIONS

Fire Hazard Severity Zone

Fire Hazard Severity Zone (FHSZ) is a layer produced by CAL FIRE and Resource Assessment Program (FRAP) using data and models describing development patterns, potential fuels over a 30-50 year time horizon, expected fire behavior, and expected burn probabilities, to quantify the likelihood and nature of vegetation fire exposure. This Second Patrol project pertains only to the "Very High" fire severity zone within LRA.

Vegetation Management Second Patrol - Practices

DEFINITIONS (continued)

Second Patrol Projects

Second Patrol Projects address only dead, dying, and declining trees, or dead portions of trees including dead overhangs, that have the ability to contact PG&E facilities in the event that they fail; Second Patrol Projects do **not** address tree growth.

VM Back Office

VM Back Office is a web-based software system that includes the Vegetation Management Database (VMD) and the Project Management Database (PMD).

Wildland Urban Interface

Wildland Urban Interface (WUI) is the area where structures and other human development meet or intermingle with undeveloped wildland. Silvis lab is the company that produces the GIS layers containing this information.

IMPLEMENTATION RESPONSIBILITIES

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

The vegetation management operations group is responsible for the distribution of this procedure by providing training and conducting regular reviews.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

REFERENCE DOCUMENTS

Developmental References:

NA



Vegetation Management Second Patrol - Practices

Supplemental References:

[TD-7102P-01, "Distribution Routine Patrol Procedure"](#)

[TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)

[TD-7102P-06, "Vegetation Management Mapping Procedure"](#)

[TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)

[TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)

[TD-7102P-16, "VM Riparian Review Procedure"](#)

[TD-7102P-16-JA01, "Identifying Riparian Areas"](#)

[TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure"](#)

[TD-7103P-09, "T&D Vegetation Hazard Notification Procedure"](#)

APPENDICES

NA

ATTACHMENTS

[TD-7102P-23, Attachment 1, "Customer Notification Process"](#)

DOCUMENT REVISION

TD-7102P-23, Vegetation Management 2016 Second Patrol - Practices, Rev. 0

DOCUMENT APPROVER

[REDACTED], Manager, VM CEMA

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager, VM CEMA South

[REDACTED], Supervising Vegetation Program Manager, VM CEMA North

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager, VM CEMA North

[REDACTED], Vegetation Program Manager, VM CEMA South



Vegetation Management Second Patrol - Practices

REVISION NOTES

| Where? | What Changed? |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure Steps Section | Moved action steps previously located in the TD-7102P-22, "VM Second Patrol - Scope of Work" procedure to this procedure; reorganized and rewrote Procedure Steps section. |

EXHIBIT H-18-3

Vegetation Management Second Patrol Procedure

SUMMARY

This utility procedure provides instructions for performing second patrol inspections (commonly referred to as patrol) and tree trimming within the following areas:

- State responsibility areas (SRAs)
- Wildland urban interface (WUI) areas
- Fire hazard severity zones (FHSZs)
- Designated high fire-threat districts (HFTDs)

The intention is to reduce the risk to the electric system by inspecting vegetation conditions on circuits within these areas approximately six months after the routine annual patrol.

California Public Utilities Commission (CPUC) decision R.15-05-006 adopted regulations to enhance fire safety in designated HFTDs across California. The HFTDs are divided into three areas: Zone 1 (tree mortality), Tier 2 (elevated fire risk), and Tier 3 (extreme fire risk). Second patrols include catastrophic event memorandum account (CEMA) recovery efforts, and the term "second patrol" is preferred and used in lieu of CEMA in this document.

The scope of work addresses the following:

- Dead, dying, and declining trees, or dead portions of trees including dead overhangs, that can contact PG&E facilities if they fail
- Green trees observed within the minimum distance requirement (MDR) or with the potential to encroach the MDR before the next patrol cycle
- Green hazard trees with the potential to impact the electric facilities
- Trees causing strain or abrasion on secondary lines
- Abnormal field conditions

Level of Use: Informational Use

TARGET AUDIENCE

PG&E vegetation management (VM) personnel

VM second patrol contractors, including pre-inspector (PI), tree crew general foreman (GF), quality control (QC), and quality assurance (QA)

SAFETY

NA

Vegetation Management Second Patrol Procedure

BEFORE YOU START

1. REVIEW the [Definitions Section](#) in this document.
2. ESTABLISH an understanding of the following VM utility procedures:
 - When inspecting transmission with underbuild, [TD-7103P-01, “Transmission Non-Orchard Routine Patrol Procedure \(TRPP\)”](#)
 - [TD-7102P-01, “Distribution Routine Patrol Procedure \(DRPP\)”](#)
 - [TD-7102P-04, “Distribution Vegetation Refusal Procedure”](#)
 - [TD-7102P-06, “Inspection Mapping”](#)
 - [TD-7102P-07, “Vegetation Management Hazard Tree Rating and Scoring”](#)
 - [TD-7102P-08, “Facility Protect and Work Difficulty Classification Procedure”](#)
 - [TD-7102P-09, “Reporting Abnormal Field Conditions Procedure”](#)
 - [TD-7102P-16, “VM Riparian Review Procedure”](#)
 - [TD-7102P-16-JA01, “Identifying Riparian Areas”](#)
 - [TD-7103P-09, “Vegetation Management Hazard Notification Procedure”](#)

Vegetation Management Second Patrol Procedure

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PROCEDURE STEPS

1 General Requirements

- 1.1 New regulations require a 4-foot (ft.) minimum clearance year-round in the designated HFTD areas; with a recommended clearance of 12 ft. at the time of trim.
- 1.2 CHECK the Fire Index Ratings for work locations before starting work.
- 1.3 FOLLOW all best management practices as defined in [Job Aid TD-7102P-01-JA01, "Best Management Practices \(BMPs\) for Vegetation Management Activities."](#)
- 1.4 FOLLOW all avoidance and minimization measures (AMMs) specific to the location.

Vegetation Management Second Patrol Procedure

2 Preparing Work for Second Patrol Inspections

2.1 The senior consulting utility forester (SCUF) must PERFORM the steps in [Appendix A, "SCUF – Prepare Work and Create Read-Only Packets for Second Patrol,"](#) to PREPARE second patrol work, CREATE read-only packages, AND ASSIGN work to a consulting utility forester (CUF).

3 Performing Patrol Types

3.1 For projects identified as **CEMA GROUND** and **CEMA Aerial** in the project management database (PMD), the PI must perform the following major steps:

1. INSPECT all portions of a line within the SRA and HFTD layers (including an HFTD in the LRA area designated as an Increased Clearance Area [ICA]) once per year, approximately 6 months after routine patrol inspection of the circuit.
2. In accordance with Utility Procedure [Utility Procedure TD-7102P-06, "Inspection Mapping,"](#) DOCUMENT the completed inspection as follows:
 - a. HIGHLIGHT the line inspected on a circuit map.
 - b. SIGN AND DATE the circuit map.

3.2 For projects identified as CEMA WUI and CEMA FHSZ in the PMD, the PI must perform the following major steps:

1. INSPECT only portions of the circuit that are in local response areas (LRAs) outside HFTD ICA AND within the two GIS layers, WUI areas and FHSZs, once per year, approximately 6 months after routine patrol inspects the circuit.
2. In accordance with [TD-7102P-06](#), DOCUMENT the completed inspection as follows:

NOTE

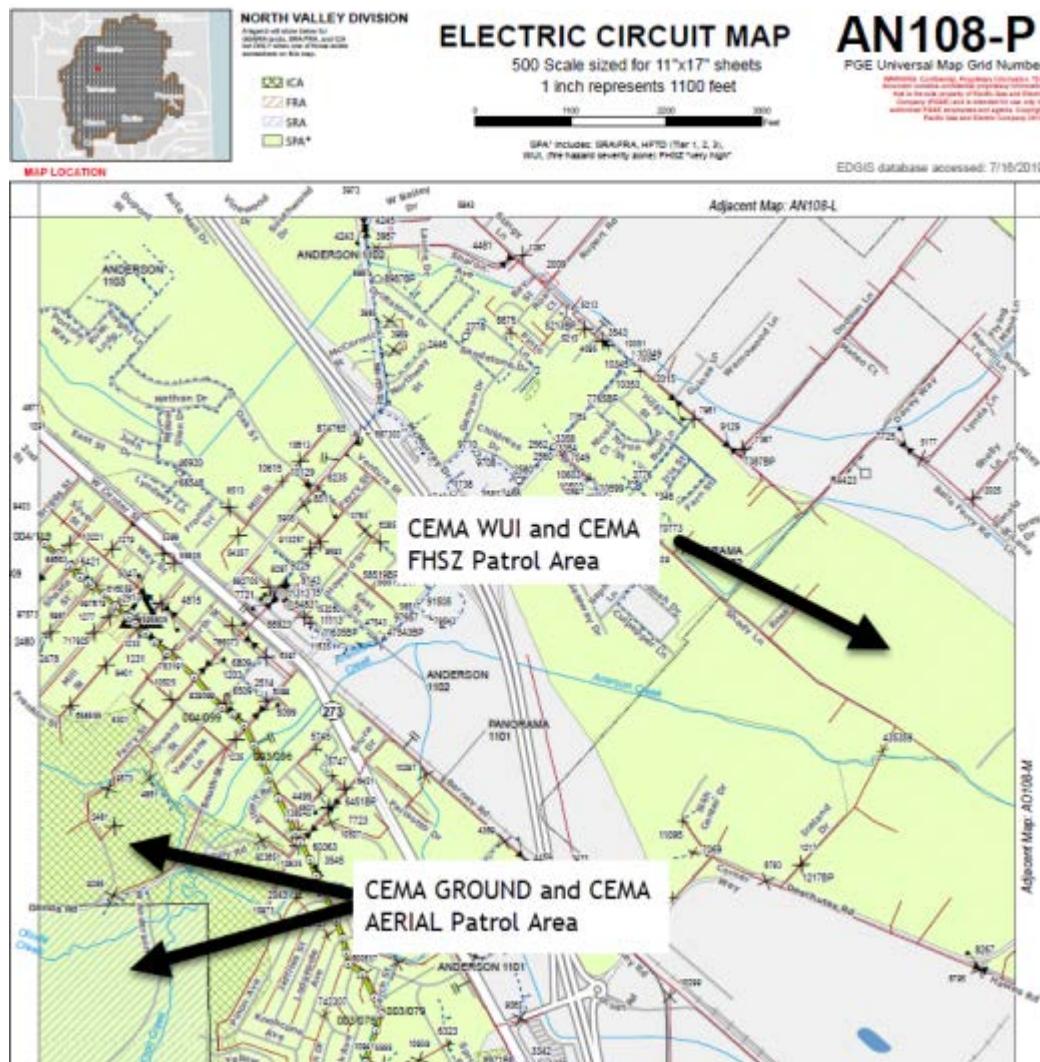
- Circuit maps with a layer designated as Second Patrol Area (SPA) are located on the Shared drive and can be accessed by going to the VMShared drive in the Second Patrol folder for the current year, within a subfolder named Second Patrol Area Maps.
- The second patrol area layer on the circuit maps contains the designated patrol areas of SRA, HFTD/ICA, WUI, and FHSZ.

- a. HIGHLIGHT the line inspected on a circuit map.
- b. SIGN AND DATE the circuit map.
- c. For projects designated as CEMA GROUND and CEMA AERIAL in the PMD, the PI must patrol all line segments WITHIN areas designated on the maps as SRA, FRA, and ICA.

Vegetation Management Second Patrol Procedure

3.2 (continued)

- d. For projects designated as CEMA WUI in the PMD, the PI must patrol all line segments within areas designated on the maps as SPA and that are NOT in the SRA/FRA or ICA layer.

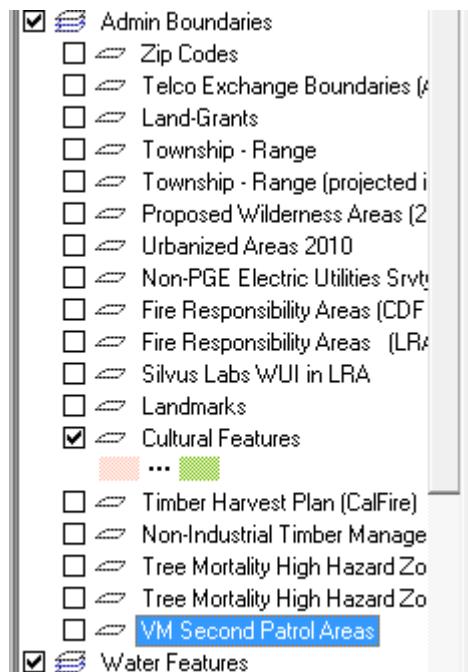


Vegetation Management Second Patrol Procedure

3.2 (continued)

3. To view these layers on MapGuide GIS, perform the following tasks:
 - a. SELECT Admin Boundaries.
 - b. For the SPA, SELECT **VM Second Patrol Areas**.

This layer is visible at the 500K scale.



4 Creating a New Packet on a Mobile Device

- 4.1 See [Appendix B, "CUF – Creating a New Packet on a Mobile Device for Second Patrol Projects."](#) for instructions for the CUF to create a new packet for each second patrol project

5 Editing Location Route Information

- 5.1 The PI must perform the following steps to edit the location route information in the mobile device to indicate that it is a CEMA project location:

1. CLICK **Edit**.

The **Edit Location Route Info** window appears.

2. For **Circuit**, SELECT the circuit undergoing work.
3. For the source side device number (**SSD #**), ENTER the source side device (SSD) on which the project is located.

Vegetation Management Second Patrol Procedure

5.1 (continued)

4. For the source side route number (**SSD Rt#**), ENTER **606060** to ensure that a single work request is created for all locations.
5. For the location route number (**Loc Rt#**), make the following entries:
 - a. ENTER the first number from the number range assigned by the SCUF to the first location.
 - b. INCREMENT each subsequent location number by 10.

For example, if the SCUF-assigned range is 210 to 300, use 210 first, followed by 220, then 230, etc.

NOTE

The **Tag Type** and Tag Number (**Tag #**) fields are not used when the prescribed work is for dead, dying, and declining trees, or dead portions of trees including dead overhangs, that can contact PG&E facilities if they fail.

6. LEAVE the **Tag Type** and **Tag #** fields blank unless work identified is for trees approaching the MDR or trees that meet Hazard Notification criteria. Refer to [Section 10.1, Table 1, "Tree Conditions."](#) for guidance on when to use appropriate tag types.
7. Click **Finish**.

6 Patrolling the Location Following the Second Patrol Scope-of Work

The scope of work addresses the following conditions:

- Dead, dying, and declining trees, or dead portions of trees including dead overhangs, that can contact PG&E facilities if they fail
- Green trees observed within the minimum distance requirement (MDR) or with the potential to encroach the MDR before next patrol cycle
- Green hazard trees with the potential to impact the electric facilities
- Trees causing strain or abrasion on secondary lines
- Abnormal field conditions

Vegetation Management Second Patrol Procedure

6.1 The CUF must RECEIVE the Locations Report from the SCUF AND must review the report to verify whether marked trees still unworked are listed on a pending work request.

1. IF the tree is on a pending work request but has declined or encroached on the MDR AND the inspector believes the tree is at risk of not holding,
THEN [TD-7103P-09](#) must be implemented.
2. The CUF must then INFORM the DMS so the pending work request line item can be closed as 'not worked' once the HN tag is generated.

7 Entering Tree Data

7.1 To enter tree data in the vegetation management database (VMD), the PI must perform the following steps:

1. On the VMD **Location** screen, CLICK the **Tree List** tab at the top of the screen.
2. CLICK **New** at the bottom of the page.
The **VMD - Tree** window appears.
3. CLICK **Edit**.
The **Edit Tree Detail Info** window appears.
4. ENTER the following information:
 - a. For **Tree Type**, SELECT from the drop-down list.
 - b. For **Species**, SELECT from the drop down list.
 - c. For **Property Owner**, SELECT from the drop-down list.
 - d. For **Quantity**, ENTER the number of trees.
 - e. For **Joint Pole**, SELECT from the drop-down list.
 - f. For **Tree Comments**, ENTER the location of the trees AND specific instructions for performing the work.
 - g. For **Trim Code**, BASE the individual tree prescriptions on [TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#) AND SELECT from the drop-down list.
 - h. For **Height**, ENTER the height in feet.
 - i. For **DBH**, ENTER the diameter in inches.

Vegetation Management Second Patrol Procedure

7.1 (continued)

- j. For **Clearance**, ENTER 0 for all removals OR specify the clearance for trims in inches.
- k. For **Priority**, SELECT **Routine** from the drop-down list.
- l. For **Cycle**, SELECT **Routine** from the drop-down list.
- m. For **Crew**, ENTER the crew type.

5. CLICK **Finish**.

8 Communicating with the Customer

NOTE

ENTER the customer contact information for any safety issues or production impacts, such as the presence of a dog, requests to notify first, locked gate, and concerned customer alerts.

8.1 The PI must perform the following steps to contact and communicate with the customer:

- 1. ATTEMPT to CONTACT the customer.
- 2. IF successful,

THEN perform the following tasks:

- a. EXPLAIN the scope of work being prescribed, including the scope of clean up and the amount of debris likely to be left behind.
- b. When possible, OBTAIN a signed Notification of Tree Work (NTW) Form from the property owner for heavy trimming and removal work.

NOTE

All non-contact refusals (absent land owner locations) require photographs of the dead/dying tree canopy to be mitigated.

3. IF **unable** to contact the customer after 3 documented attempts within 5 business days,

THEN perform the following steps:

- a. FOLLOW [Attachment 1, "Customer Notification Process."](#)
- b. PROVIDE required photographs for the Customer Impact process.

Vegetation Management Second Patrol Procedure

9 Processing Refusals

9.1 IF the customer refuses work entirely OR limits the work so as to severely limit positive trim results, THEN the PI must perform the following steps:

1. INDICATE the location as a refusal in the mobile device AND CREATE an ITS record.
2. FOLLOW [TD-7102P-04, "Distribution Vegetation Refusal Procedure."](#)
3. ENTER the tree prescriptions into the mobile device.
4. MARK the location as "Refusal."

9.2 The local lead or refusal specialist must perform the following tasks:

1. ATTEMPT to make a second contact to resolve the refusal.
2. IF the refusal remains unresolved,

THEN PASS the refusal to the designated second patrol SCUF or second patrol VPM for further action.

10 Identifying Routine Compliance Work During Second Patrol

10.1 The PI must IDENTIFY the trees with conditions listed in Table 1 below AND PERFORM the action specified for each.

Table 1. Tree Conditions

| Tree Condition Identified | Action |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Green trees observed within the MDR, See TD-7102P-01 , Attachment 1, "Minimum Distance Requirements (MDR)." | FOLLOW Utility Procedure TD-7103P-09, "Vegetation Management Hazard Notification Procedure." |
| Trees that are approaching the MDR that are not expected to maintain compliance until the next routine inspection cycle. | ENTER the routine work in the mobile device as a Missed Tree tag. |
| Green, significantly leaning trees with indications of basal defect or soil instability, and uprooted trees in the surrounding stand, that are likely to fail into the facilities before the next annual patrol. | ENTER the routine work for these trees in the mobile device as an Unforeseen tag. |
| Structurally unsound green limbs and dead palm fronds above the conductors with the potential to fail into the facilities before the next routine patrol. | ENTER the routine work for these trees in the mobile device as an Unforeseen tag. |

10.2 WHEN an abnormal field condition is identified,

THEN the PI and TC must FOLLOW [Utility Procedure TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)

Vegetation Management Second Patrol Procedure

10.3 The second patrol SCUF must NOTIFY the local area DMS of routine tags created and uploaded to the system.

11 Processing Trees within Riparian Areas

11.1 For identifying riparian areas, the PI must FOLLOW the instructions in [Job Aid TD-7102P-16-JA01, "Identifying Riparian Areas."](#)

11.2 For trees within a riparian area identified as needing work, the PI must FOLLOW [Utility Procedure TD-7102P-16, "VM Riparian Review Procedure."](#)

12 Post Patrol and Reporting

12.1 At least once a day, the PI must TRANSMIT the data collected using the mobile device.

12.2 At the end of each project, the PI must PERFORM the following steps:

1. COLLECT all project documents, which commonly include the following documents:
 - NTW
 - Highlighted Maps
 - Inspection Maps
2. SUBMIT the documents to the SCUF.
3. STORE the documents in the circuit folder.

13 Completing the Project

13.1 WHEN a project is complete,

THEN the SCUF must PERFORM the following steps:

1. SEND a completion email to the local DMS, providing the following information:
 - Project Name
 - Project Number
 - Date of closing
 - Total number of units

Vegetation Management Second Patrol Procedure

13.1 (continued)

2. FILE the project folders in the local office with all relevant documentation, including, but not limited to the following documents:
 - Index and Field maps highlighted and signed by the CUF and SCUF.
 - Original signed NTWs (where applicable).
 - Additional permits (ERTC communications, AMMs).

14 Performing Aerial Patrols

- 14.1 See [Attachment 3, "Aerial Patrols."](#) for guidance on planning, executing and documenting aerial patrols.

END of Instructions

DEFINITIONS

CEMA: In 2014, PG&E implemented a CEMA program to recover costs due to increased tree mortality from prolonged drought and bark beetle infestations within the PG&E service territory.

Fire Hazard Severity Zone (FHSZ): A layer produced by CAL FIRE and the Resource Assessment Program (FRAP) using data and models describing development patterns, potential fuels over a 30-50 year time horizon, expected fire behavior, and expected burn probabilities, to quantify the likelihood and nature of vegetation fire exposure. This second patrol project pertains only to the **very high** fire severity zone within the LRA.

VM Back Office: A web-based software system that includes the VMD and the PMD.

Wildland Urban Interface: The area where structures and other human developments meet or intermingle with undeveloped wildland.

IMPLEMENTATION RESPONSIBILITIES

VM operations personnel are responsible for the rollout, communication, and distribution of this utility procedure.

GOVERNING DOCUMENT

[Utility Standard TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

Vegetation Management Second Patrol Procedure

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[California Public Utilities Commission \(CPUC\) General Order \(G.O.\) 95, Rule 35](#)

[G.O. 95, Rule 18, Section B](#)

[Public Resource Code \(PRC\) 4292](#)

[PRC 4293](#)

REFERENCE DOCUMENTS

Supplemental References:

[TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

[TD-7102P-01, Attachment 1, "Minimum Distance Requirements \(MDR\)"](#)

[TD-7102P-04, "Distribution Vegetation Refusal Procedure"](#)

[TD-7102P-06, "Inspection Mapping"](#)

[TD-7102P-08, "Facility Protect and Work Difficulty Classification Procedure"](#)

[TD-7102P-09, "Reporting Abnormal Field Conditions Procedure"](#)

[TD-7102P-16, "VM Riparian Review Procedure"](#)

[TD-7102P-16-JA01, "Identifying Riparian Areas"](#)

[TD-7103P-01, "Transmission Non-Orchard Routine Patrol Procedure \(TRPP\)"](#)

[TD-7103P-09, "Vegetation Management Hazard Notification Procedure"](#)

APPENDICES

[Appendix A, "SCUF – Prepare Work and Create Read-Only Packets for Second Patrol"](#)

[Appendix B, "CUF – Creating a New Packet on a Mobile Device for Second Patrol Projects"](#)

ATTACHMENTS

[Attachment 1, "Customer Notification Process"](#)

[Attachment 2, "Red Flag Patrols"](#)

[Attachment 3, "Aerial Patrols"](#)



Vegetation Management Second Patrol Procedure

DOCUMENT REVISION

TD-7102P-23, Vegetation Management 2016 Second Patrol - Practices, Rev. 0

TD-7102P-23, "Vegetation Management 2017 Second Patrol - Practices, Rev. 1"

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Program Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Supervising Program Manager, Vegetation Management

[REDACTED], Supervising Program Manager, Vegetation Management

REVISION NOTES

| Where? | What Changed? |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure Steps Section | Moved action steps previously located in the TD-7102B-007, "VM Second Patrol - Scope of Work" procedure to this procedure; reorganized and rewrote Procedure Steps section. |
| Incorporated B012 and B019. | To include HFTD to the current year's Second Patrol projects in PMD, Second Patrols are now in all HFTD areas, not limited to just SRA or Specific WUI LRA areas. Scope includes Dead/Dying trees listed as CEMA account type. Also includes trees within the MDR to be entered as HN Tags. Trees outside the MDR but that will not hold the MDR clearance until next PI cycle to be entered as missed tree tag (or other if applicable). Also includes abnormal field conditions and hazard trees due to structural defects that cannot wait for next cycle. |
| Red Flag Patrol Section Created Attachments for | Moved to attachment Aerial patrols Using LiDAR data |
| Created appendices for | Planning second patrol work and creating read only packets Creating new packet on mobile device for second patrol |
| Throughout | Edited for alignment with GDM documentation standards. |

Vegetation Management Second Patrol Procedure

Appendix A, SCUF – Prepare Work and Create Read-Only Packets for Second Patrol

Page 1 of 3

- A. The SCUF must perform the following steps to prepare work for the second patrol:
 - 1. IDENTIFY the project to work.
 - 2. SEND a "start of project" email to the DMS and local VPMs.
 - 3. CREATE a VMD Locations Report for locations where trees are marked for mitigation but still standing, as follows:
 - a In the VMD Locations Report, PERFORM an Advanced Search with the following information:
 - Division
 - Account type **maintenance**
 - Circuit Name
 - SSD RT #
 - Trim Type **IN LIST = ALL FP CODES**
 - b **SELECT VMD Locations.**
 - c **SELECT RUN.**
 - 4. RESEARCH, COMPILE, AND PROVIDE the following project information to the CUF performing the second patrol inspection:
 - Circuit name and project number
 - Number range for Location Route Number
 - Copy of line section / circuit map from local area DMS / SCUF
 - VMD Locations Report of previous First Patrol FP work
 - PI Tree Inspection Safety Report
 - Ownership issues
 - Agency issues
 - Customer issues
 - Municipal and/or local ordinances
 - Environmental issues, such as Limited Operating Periods (LOPs) and FERC areas
 - 5. ASSIGN the project to a CUF for patrol.

Vegetation Management Second Patrol Procedure

Appendix A, SCUF – Prepare Work and Create Read-Only Packets for Second Patrol

Page 2 of 3

B. The SCUF must perform the following steps to create a read-only packet in VMD:

NOTE

The SCUF may assign CUF **read-only** routine maintenance pre-load packets for each project.

1. If needed, the SCUF must FOLLOW the instructions below to create a read-only packet:
 - a NAVIGATE to the Vegetation Management Website.
 - b In the **Functions** section, CLICK on **Back Office VMD**.
The **Back Office VMD Main Menu** screen appears.
 - c In the Back Office VMD Main Menu, CLICK on **Create Preload Packet**.
The PI Work Packet – Pre-Load Query screen appears.
 - d CREATE the preload packet as follows:
 - (1) For **Division**, SELECT the appropriate division.
 - (2) Under **Preload Account Type to Create**, SELECT CEMA.
 - (3) Under **Account Type to Search**, SELECT Maintenance.
 - (4) Under **Generation Criteria to Search**, SELECT Circuit, SSD Route.
 - (5) In the **Field** column, from the first **Select Field Option** pull-down menu, SELECT Circuit Name.
 - (6) At the bottom of the **PI Work Packet** screen, CLICK **Run Query**.
 - (7) The results of the query appear.
2. To ASSIGN circuits and routes, perform the following steps:
 - a CHECK the circuits and routes to assign.
 - b CLICK **Assign** at the bottom of the window.
The **Assign To Options** window pops up.

Vegetation Management Second Patrol Procedure

Appendix A, SCUF – Prepare Work and Create Read-Only Packets for Second Patrol

Page 3 of 3

B.2 (continued)

- c ASSIGN options as follows:
 - (1) For **Contractor**, SELECT the contractor.
 - (2) For **Mobile User**, SELECT the CUF.
 - (3) CLICK within the **PMD Project Name** field to display a drop-down list AND SELECT the appropriate project name.
The system automatically fills in the **PMD Project Number** field.
 - (4) In the **Comments** field, TYPE “Read Only.”



CAUTION

The **Read Only** box **must** be checked to prevent edits to routine maintenance records,

- d At the bottom of the **Assign to Options** window, MAKE the following selections:
 - (1) CHECK the **Read Only** field to make the packet read only.
 - (2) CLICK **OK**.

Creation of the read-only packet is complete.

Vegetation Management Second Patrol Procedure

Appendix B, CUF – Create a New Packet on a Mobile Device for Second Patrol Projects

Page 1 of 1

A. The CUF must perform the following steps to create a new packet for each second patrol project where work is prescribed using the VM mobile application on a mobile device:

1. In the **Applications** tab, SELECT the icon for **VM Application**.

The **Work Folder** screen appears.

2. At the bottom of the **Work Folder** screen, CLICK **New**.

The Create Packet folder appears.

3. Make the following selections for the fields in the **Create Packet** window:

- a For **Account Type**, SELECT **CEMA**.

- b For **Division**, SELECT the division in which the work is being performed.

- c CLICK **Distribution**.

- d For **Project ID** (required), ENTER the last six digits of the project ID provided by the SCUF, omitting the leading zero and without the dash (-). For example, for a PMD project number provided by the SCUF of 0xx-xxxx, enter the project ID in the following format: xxxxxx.

- e CLICK **Finish**.

The new packet is created and the VMD **Location** screen appears.

EXHIBIT H-18-4

Second Patrol - Practices

Attachment 1, Customer Notification Process

This attachment is intended to provide guidance to the vegetation management and local customer experience electric outreach (LCE Electric Outreach) teams for notifying customers of tree work identified during Second Patrol inspections. See the process flowchart and timeline in the following appendices:

- Appendix A, CEMA (Drought Emergency Response) Notification Flowchart
- Appendix C, LCE Electric Outreach Team Timeline

Second Patrols are often identified with the label Catastrophic Event Memorandum Account (CEMA).

1. On Day 1, Pre-Inspector Makes First Contact Attempt

- 1.1 Pre-inspector (PI) ATTEMPTS to contact property owner AND OBTAIN signed Notice of Tree Work (NTW).
 - 1.1.1 IF PI is unable to reach customer,
THEN PI LEAVES door card and completed NTW at the property.
 - 1.1.2 IF NTW is not signed on first attempt,
THEN PI PHOTOGRAPHS tree(s) under inspection.
 - 1.1.3 IF contact information is available or easily attainable,
THEN PI CALLS property owner.
 - 1.1.4 IF customer has **not** responded after five (5) days, THEN:
 1. PI COMPLETES the log form in Appendix B, Second Patrol Notification Attempt Log AND SUBMITS the form to SCUF or designated lead.
 2. CUF does the following on mobile device:
 - a. CHANGES **location** to refusal status,
 - b. CREATES an Issue Tracking System (ITS) record,
 - c. UPDATES ITS record with contact attempts and available contact information.

2. On Day 5 from PI Contact Date

- 2.1 PI supervisor VERIFIES customer information AND PERFORMS final contact attempt to obtain signed NTW
 - 2.1.1 IF unable to reach customer,
THEN SCUF INITIATES CEMA Customer Notification Package.

Second Patrol - Practices

Attachment 1, Customer Notification Process

2.1.2 SCUF DETERMINES whether tree work is low LCE Electric Outreach using the following criteria:

- Tree(s) Dead/Dying/Declining.
- Property is not a previous refusal location and not in an area sensitive to PG&E vegetation management activities.

2.2 WHEN locations are considered high impact,

THEN SCUF forwards location information to the PG&E Second Patrol team for approval.

2.3 Locations not approved go through the normal notification and refusal process.

3. On Day 5 from PI Contact Date

3.1 On Day 5 from first contact attempt, the SCUF does the following:

3.1.1 VERIFIES that the information in ITS is accurate.

3.1.2 EDITS the ITS refusal as shown below:

NOTE

Changes to the Refusal Sub Type and Date Initiated can only be made when editing the record for the first time.

3.1.3 CHANGES **Sub Type** to **No Response**.

3.1.4 CHANGES **Date Initiated** to the day the issue is opened by the SCUF.

3.1.5 CLICKS on the **Customer** tab AND UPLOADS customer contact information.

3.1.6 VERIFIES that all contact attempts are documented in the **Comments** field.

3.2 UPLOADS the following items under **Documents** in ITS:

- Picture of tree(s)
- NTW
- Notification attempt log (including customer's name, address, phone, APN)

4. Within 20 days from Original PI Contact Date

4.1 LCE Electric Outreach lead (lead) does the following:

4.1.1 Opens the ITS record AND VERIFIES that PI has provided the appropriate documentation.

1. IF documentation is missing,

THEN CHANGES ITS status to **Review**.

Second Patrol - Practices

Attachment 1, Customer Notification Process

2. IF all documentation is correct,
THEN CHANGES ITS status to **In Progress**.
 - 4.1.2 Lead CALLS customer.
 1. IF lead CONTACTS customer AND OBTAINS a signed NTW,
THEN lead CHANGES ITS status to **Resolved**.
 2. IF customer wants an appointment to review the prescribed work,
THEN lead CHANGES ITS **Status** to **Hold**.
 - 4.1.3 IF **no** contact is made with customer, THEN
 1. Lead REQUESTS clerk to send "Intent To Perform Work" letter and NTW to customer by U.S. Mail.
 2. IF after 10 days, **no** response is received from customer,
THEN lead USES appropriate CEMA VPM signature on NTW.
 - a. Lead UPLOADS NTW to ITS AND CHANGES status changed to **Resolved**.

5. SCUF Closes ITS

- 5.1 For ITS locations that have been Resolved, the SCUF CLOSES the ITS record AND CHANGES the VMD tree record to **Okay** Status.
- 5.2 AFTER the VMD Tree record is set to **Okay** Status,
THEN SCUF DIRECTS Database Management Specialist (DMS) to generate work.

APPENDICES

Appendix A, CEMA (Drought Emergency Response) Notification Flowchart

Appendix B, Second Patrol Notification Attempt Log

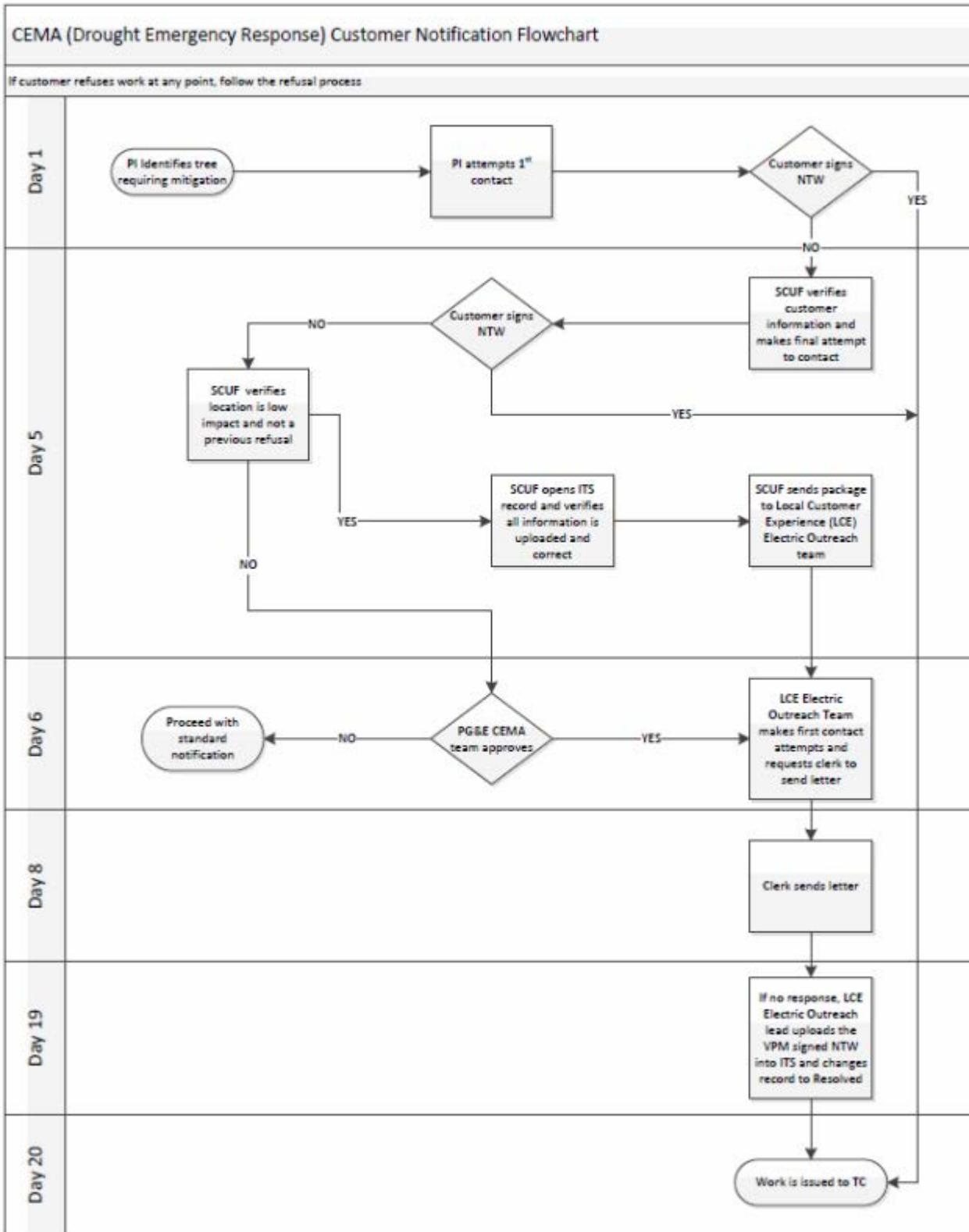
Appendix C, LCE Electric Outreach Team Timeline



Second Patrol - Practices

Attachment 1, Customer Notification Process

Appendix A, CEMA (Drought Emergency Response) Notification Flowchart



Second Patrol - Practices

Attachment 1, Customer Notification Process

Appendix B, Second Patrol Notification Attempt Log

Second Patrol Notification Attempt Log

Circuit _____ SSD _____ Loc. Rt. _____

Inspection Date _____ Door Card & NTW left at residence Y / N

If a door card and/or NTW are left at a residence, you have three (3) days to wait for a returned phone call. If you are not contacted, you must complete this form and other documents, and submit them to your SCUF or designated lead.

Name _____

Address _____

APN _____

Phone _____

Concerns _____

Date and LAN ID for 1st Contact Attempt: LAN ID: _____

1st Contact Attempt Method: _____

Date and LAN ID for 2nd Contact Attempt: LAN ID: _____

2nd Contact Attempt Method: _____

NTW# left at residence NTW# issued to LCE Electric Outreach lead



Second Patrol - Practices

Attachment 1, Customer Notification Process

Appendix C, LCE Electric Outreach Team Timeline

Table 1. LCE Electric Outreach Team Timeline

| Process | Vegetation Management (Days) | LCE Electric Outreach (Days) |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|
| Inspection Complete: Door hanger and Notice of Tree Work (NTW) form left for customer (if no contact can be made). | Day 1 | |
| ITS record is changed to Open and SCUF verifies that all information is uploaded to ITS. | Day 5 | |
| LCE Electric Outreach team receives work package and makes first contact attempts. Request for letter sent to clerk. | Day 6 | Day 1 |
| Clerk sends letter. | Day 8 | Day 3 |
| Time allowed for customer to respond. | Day 18 | Day 13 |
| LCE Electric Outreach representative calls (if LCE Electric Outreach has not heard from customer); minimum of two (2) attempts. | Days 6 -18 | Day 6-13 |
| If no response, LCE Electric Outreach uploads the VPM-signed NTW to ITS and changes record to Resolved . | Day 19 | Day 14 |
| Tree work issued to crews. | Day 20 | Day 15 |



Second Patrol - Practices

Attachment 1, Customer Notification Process

DOCUMENT CONTACT

[REDACTED] Supervising Vegetation Program Manager – VM CEMA South

[REDACTED], Vegetation Program Manager – VM CEMA North

REVISION NOTES

| Where? | What Changed? |
|-------------------|-------------------------------------------------------------------------------------------------------|
| Sub-step 1.1.4 | Changed time frame for PI to turn location into the LCE Electric Outreach team from 3 days to 5 days. |
| Instruction steps | Added steps for utilizing ITS when tracking the progress of the location from start to completion. |

EXHIBIT H-18-5

Attachment 2, Red Flag Patrols

This attachment provides guidance for planning, executing, and documenting patrols performed by contractors on Red Flag days in designated Red Flag areas.

1. Pre-Inspection (PI) Contractors

- 1.1 The PG&E vegetation management program pre-inspection (PI) team uses Tag records to identify locations to focus on during Red Flag patrols. The PG&E [Utility Fire Potential Index \(FPI\)](#) is used to locate, plan, and perform the inspection within designated red flag areas. See Figure 1 and Figure 2 (below) as examples:

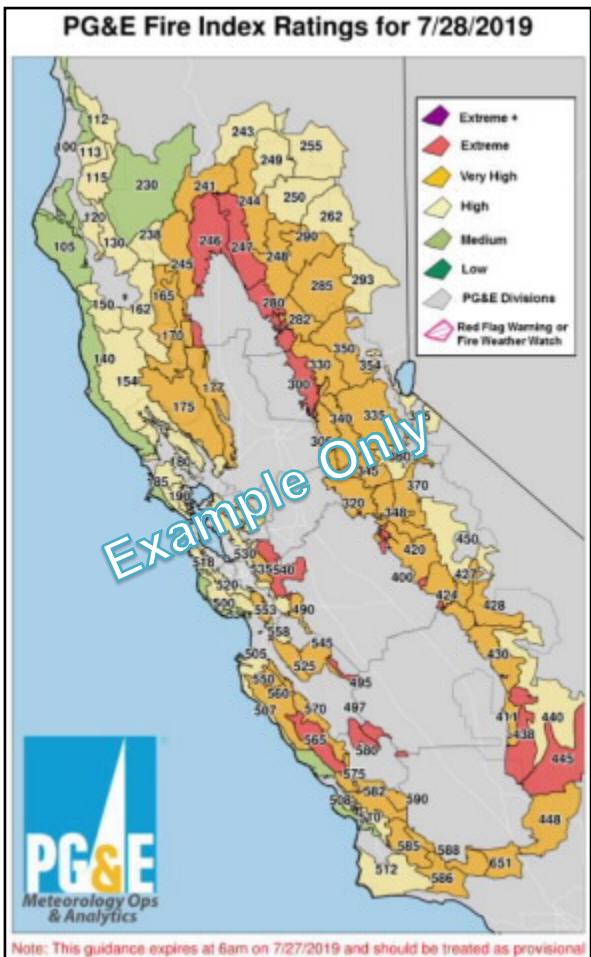


Figure 1 Utility Fire Potential Index Ratings



Attachment 2, Red Flag Patrols

| Current Scale | Scale as of 7/30/2019 |
|---------------|--------------------------|
| Low | R1 |
| Medium | R2 |
| High | R3 |
| V. High | R4 |
| Extreme | R5 |
| Extreme-Plus | R5-Plus |

Figure 2 FPI Rating Scale

Tag records are used as a tool to assist the PI, providing a refined method of identifying potential risk AND a deliberate approach to patrolling locations within the designated red flag areas. The PI must search for the following records:

- Records of pending HN tags that have gone beyond the timeline for generation and work completion, found in [Utility Procedure TD-7103P-09, "Vegetation Management Hazard Notification Procedure"](#) –The PI must follow up with the tree contractor (TC) the tag was assigned to and request a signed work request (WR). If the TC is unable to provide one, the PI will be asked to work the tree within 24 hours if the work can be performed safely AND return a signed copy of the work request.
- Records of pending Accelerated priority trees over 30 days old – The PI must perform field visits to these locations to verify their current status.
- Records of Pending FPT trees that are over 180 days past inspection – The PI must follow up with the TC the work was assigned to AND request a signed WR. If the tree contractor is unable to provide one, the PI will be asked to work the tree within 24 hours if the work can be performed safely AND return a signed copy of the work request.

1.2 On red flag days, the second patrol SCUF must REQUEST the PI to patrol within the designated red flag areas.

1.3 The second patrol SCUF must DIRECT the PI as to WHEN to perform patrols.

1. Depending on weather conditions and times of the Red Flag Warning, the SCUF may request that patrols be conducted outside normal business hours.



Attachment 2, Red Flag Patrols

- 1.4 WHEN red flag patrols are conducted on a circuit,
THEN the PI must PERFORM the following steps:
 1. CREATE a circuit map labeled "Red Flag Patrols" to DOCUMENT the line segments inspected.
 2. On the circuit map, HIGHLIGHT, SIGN, AND DATE the portions of line inspected during the red flag patrol.
 3. RETAIN highlighted and signed patrol maps in the circuit folder, as per [Utility Procedure TD-7102P-06, "Inspection Mapping."](#)
- 1.5 IF hazardous tree conditions or trees inside the MDR are observed,
THEN the PI must FOLLOW [Utility Procedure TD-7103P-09, "Vegetation Management Hazard Notification Procedure."](#)
- 1.6 IF abnormal field conditions are found,
THEN the PI must FOLLOW the instructions in [Utility Procedure TD-7102P-09, "Reporting Abnormal Field Conditions Procedure."](#)

2. Tree Contractors (TCs)

- 2.1 On red flag days, IF tree work was performed within the designated red flag areas,
THEN the TC must perform the following tasks:
 1. REMAIN at the last work location completed that same day for one half hour after equipment is shut off.
 2. INSPECT for ignitions at all locations of work completed that same day.

3. Contacts for Additional Information

- [REDACTED]
- [REDACTED]

EXHIBIT H-18-6



Attachment 3, Aerial Patrols

This attachment provides guidance for planning, executing, and documenting aerial patrols for second patrol projects.

1. BEFORE a PI may participate in an aerial patrol, PI must complete the PG&E Academy training course TECH-0002WBT "Basic Helicopter Safety."
2. BEFORE leading an aerial patrol from either the front or rear seat, PI must complete the PG&E Academy training course requirements for SAFE-0256 "Flying in the Wire and Obstruction Environment", maintain current certification, AND possess a current Helicopter ID card.
3. For projects identified as Second Patrol Aerial in the project management database (PMD), the PI must **PERFORM** the following steps:
 - a. **INSPECT** the circuit from a helicopter.
 - b. **PERFORM** a ground patrol of any portion of the circuit that cannot be flown or clearly seen from the air.
4. The SCUF must **COORDINATE** with a PI who possesses a current Helicopter ID card to schedule helicopter flight.
5. During the flight, the PI is responsible for **GUIDING** the patrol AND **IDENTIFYING** dead trees and hazardous conditions.
 - a. **WHEN** dead trees are identified with the potential to impact lines,
THEN the PI must perform the following tasks:
 - (1) **CAPTURE** the GPS coordinates of the location.
 - (2) On an aerial patrol circuit map, **HIGHLIGHT**, **SIGN**, AND **DATE** all line segments patrolled from the air.
 - (3) As documentation of the completed inspection, **RETAIN** highlighted and signed aerial patrol maps, as per [Utility Procedure TD-7102P-06, "Inspection Mapping."](#)
6. For locations identified from the air with potential tree issues, the PI must **GROUND TRUTH** the findings by **SENDING** a CUF to the field to **VERIFY** whether the trees meet the work scope.
 - a. The PI must **LIST** all trees identified as meeting the work scope for work.
 - b. After **GROUND TRUTHING** the locations, the PI must **SIGN** AND **DATE** the map.
 - c. As documentation of the completed inspection, the PI must **RETAIN** highlighted and signed aerial patrol maps, as per [TD-7102P-06](#).

EXHIBIT H-19-1

Vegetation Management 2016 Combined First and Routine Patrol

SUMMARY

First Patrol is an initiative to identify dead, dying, or declining trees during routine inspection and to list them separately from other routine work so that the cost for performing their tree work can be charged to the Catastrophic Event Memorandum Account (CEMA) budget. One mobile device is used for listing both First Patrol findings and routine work.

This procedure is intended for use on all circuits in Local, State, and Federal Responsibility Areas (LRA, SRA, and FRA). It addresses only dead, dying, or declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail. Use of this procedure is time-limited, and is expected to end in late 2016.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management governance and support personnel

Vegetation management operations personnel—North and South

Vegetation management patrols: pre-inspection (PI) and tree crew (TC) contractors

SAFETY

NA

BEFORE YOU START

NA



Vegetation Management 2016 Combined First and Routine Patrol

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| <u>SUBSECTION</u> | <u>TITLE</u> | <u>PAGE</u> |
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| 2 | CUF Adds Alerts for First Patrol | 2 |
| 3 | DMS Generates Work Request for First Patrol..... | 5 |
| 4 | DMS Provides Routine Report to Tree Crews | 8 |

PROCEDURE STEPS

1 Scope of Work

1.1 The PI must LIST for First Patrol all dead, dying, or declining trees identified during routine patrol that require Facility Protect (FP) work, such as removal, major and minor trims, and FP overhangs.

2 CUF Adds Alerts for First Patrol

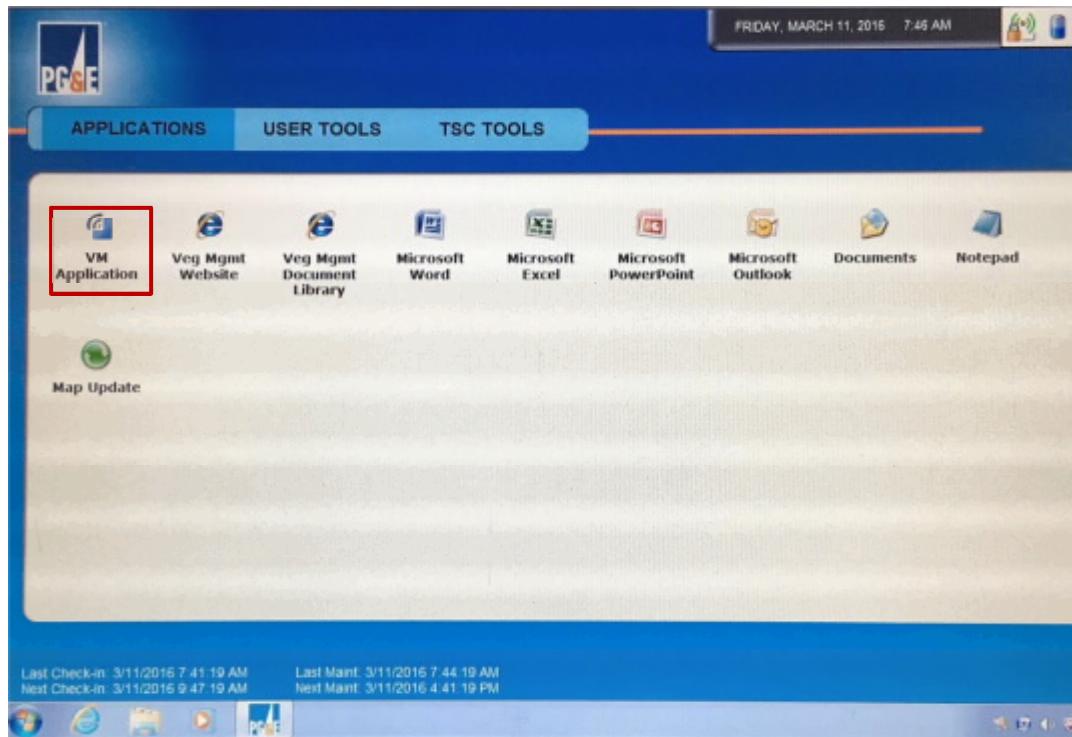
2.1 WHEN a consulting utility forester (CUF) identifies a tree that meets the First Patrol scope of work during a routine inspection,

THEN the CUF ADDS an alert for First Patrol in the VM mobile application on a mobile device as follows:

1. In the **Applications** tab, CLICK on the icon for **VM Application**.

Vegetation Management 2016 Combined First and Routine Patrol

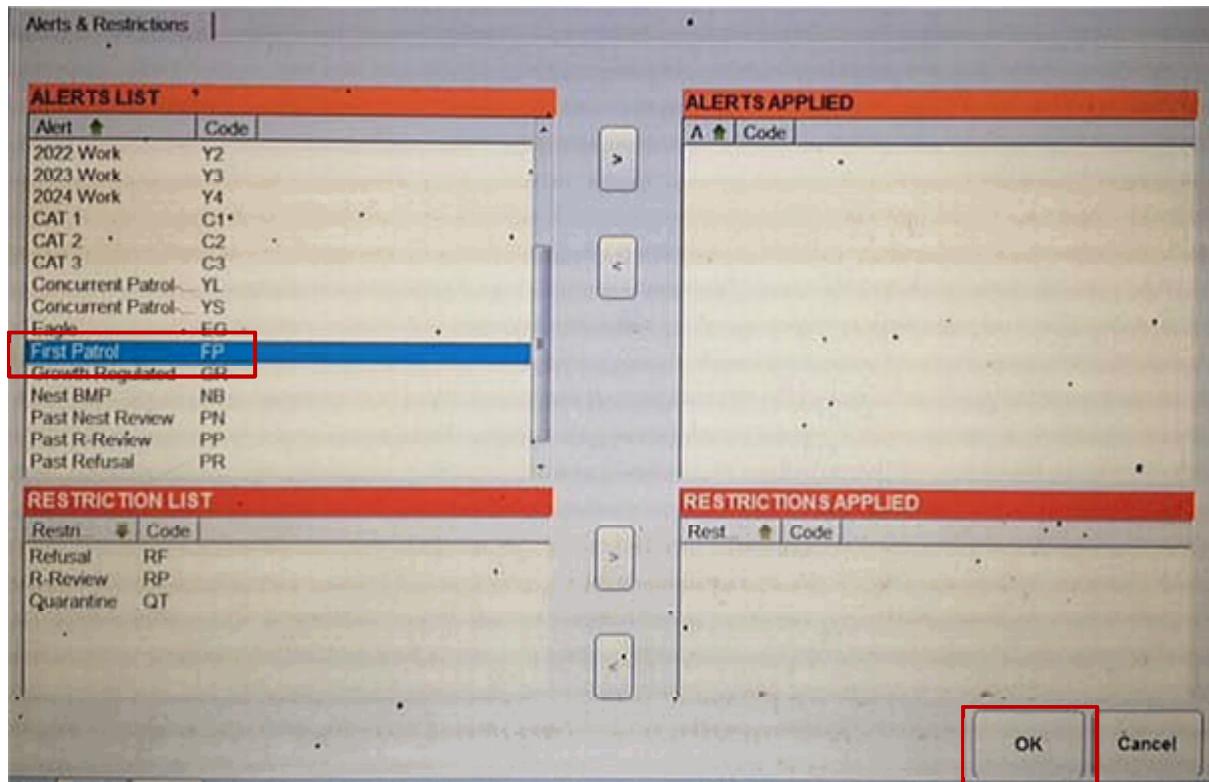
2.1, Substep 1. (continued)



2. NAVIGATE to the tree record.
3. ENTER all the tree information in the routine packet in the VM application in the same manner as routine units are entered.
4. CLICK on **Alerts** within the tree record.
5. SELECT **First Patrol** from the ALERTS LIST.

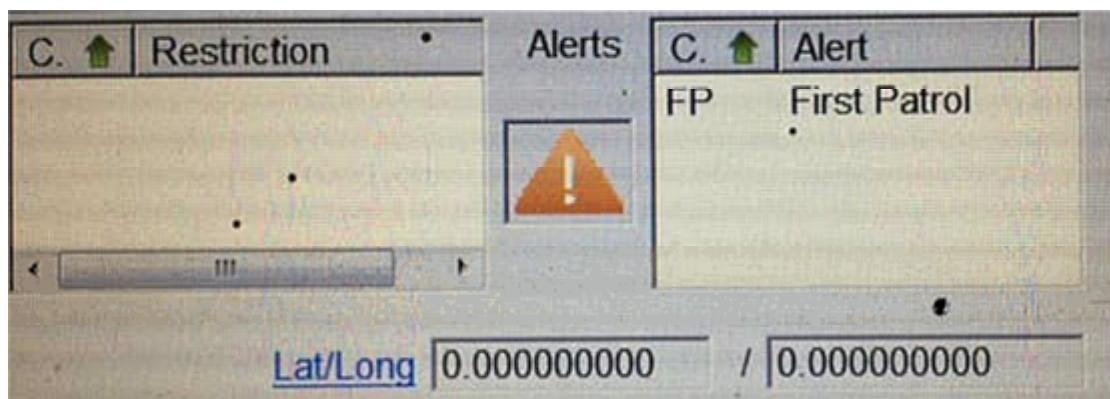
Vegetation Management 2016 Combined First and Routine Patrol

2.1, Substep 5. (continued)



6. CLICK on OK.

The alert appears on the specific tree record.



Vegetation Management 2016 Combined First and Routine Patrol

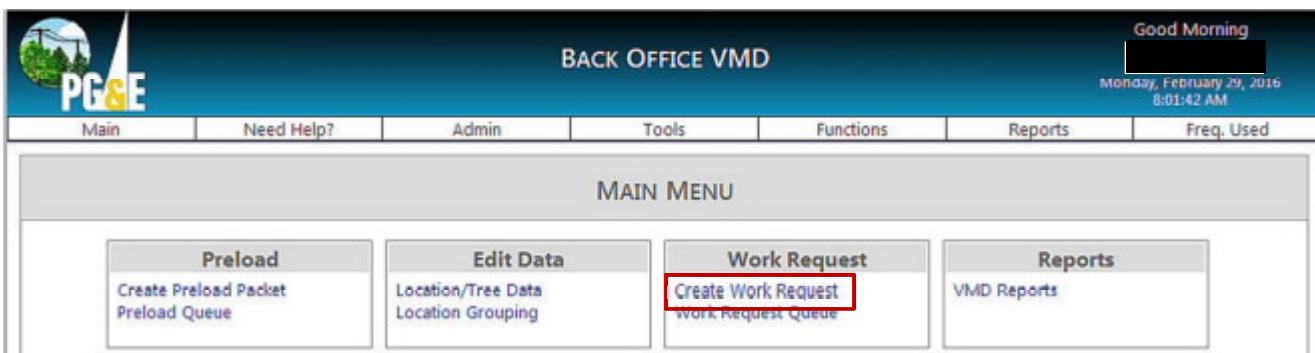
3 DMS Generates Work Request for First Patrol

3.1 GENERATE separate work requests for trees listed with a First Patrol alert (trees requiring FP work), using Standing Order Number 8170255.

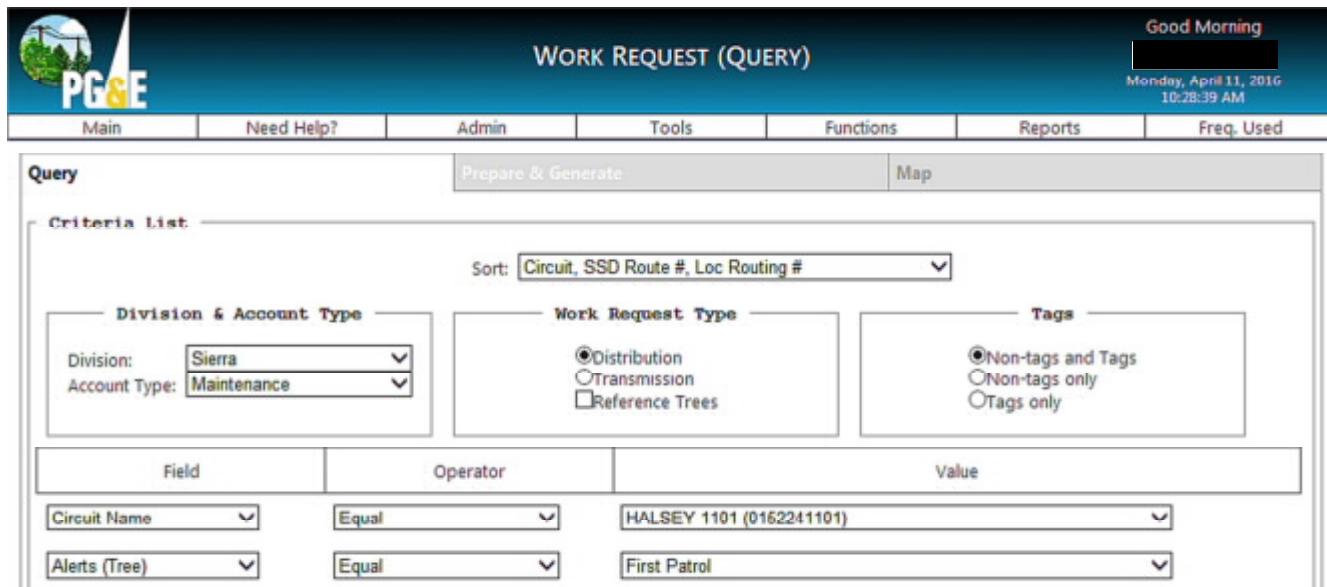
1. Generate all First Patrol FP dead trees first.

3.2 CREATE Work Request

1. In VMD under Work Request, CLICK on **Create Work Request**.



The Work Request (Query) screen appears.



| Field | Operator | Value |
|---------------|----------|--------------------------|
| Circuit Name | Equal | HALSEY 1101 (0152241101) |
| Alerts (Tree) | Equal | First Patrol |

2. FILL in the following fields:

- a. For **Sort**, SELECT **Circuit, SSD Route #, Loc. Routing #** from the dropdown menu.

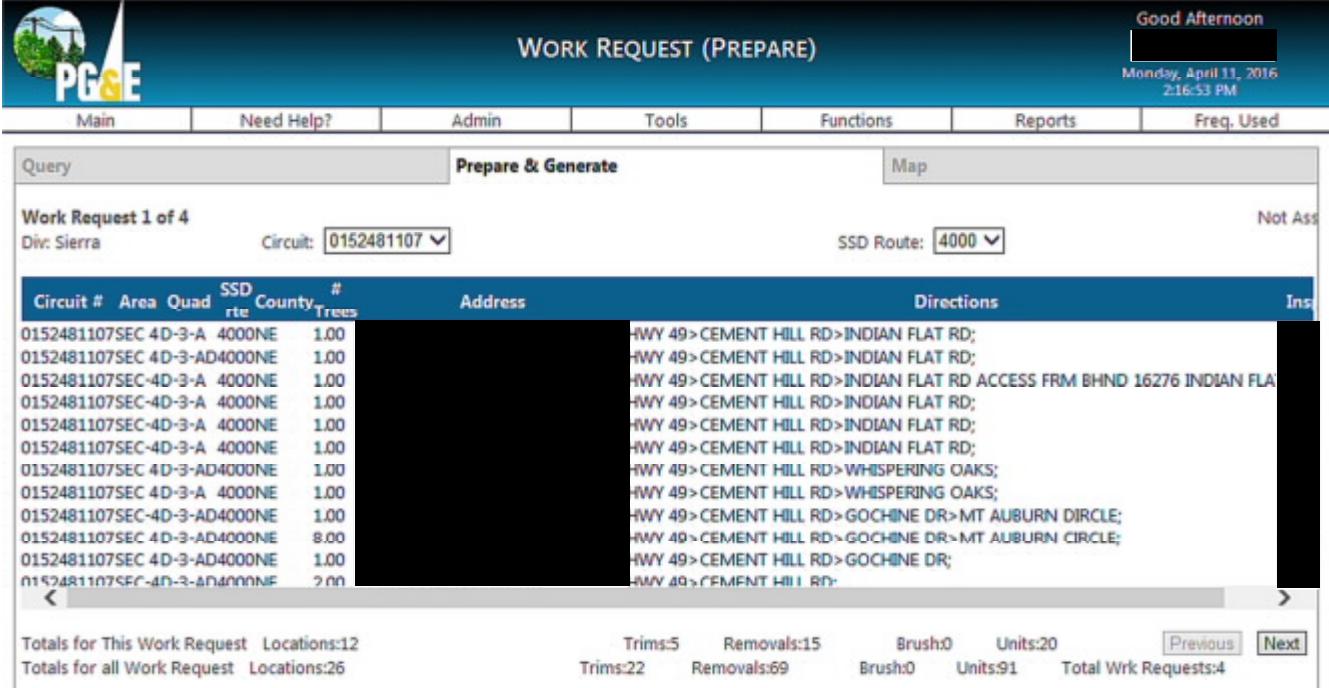
Vegetation Management 2016 Combined First and Routine Patrol

3.2, Substep 2. (continued)

- b. For **Division**, SELECT the division from the dropdown menu.
- c. For **Account Type**, SELECT **Maintenance**.
- d. For **Work Request Type**, SELECT **Distribution**.
- e. For **Tags**, SELECT **Non-tags and Tags**.
- f. For **Circuit Name**, SELECT circuit from the dropdown menu.
- g. For **Alerts (Trees)**, SELECT **First Patrol** from the dropdown menu.

3. CLICK on the **Run Query** button at the bottom of the screen.

The results of the query appear.



| Circuit # | Area | Quad | SSD rte | County | # Trees | Address | Directions | Instructions |
|---------------|---------|------|---------|--------|---------|---------|-----------------------------------------------------------------------|--------------|
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD ACCESS FRM BHND 16276 INDIAN FLA | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>WHISPERING OAKS; | |
| 0152481107SEC | 4D-3-A | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>WHISPERING OAKS; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>GOCHINE DR>MT AUBURN DIRCLE; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 8.00 | | HWY 49>CEMENT HILL RD>GOCHINE DR>MT AUBURN CIRCLE; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 1.00 | | HWY 49>CEMENT HILL RD>GOCHINE DR; | |
| 0152481107SEC | 4D-3-AD | | 4000NE | | 2.00 | | HWY 49>CEMENT HILL RD>GOCHINE DR; | |

Totals for This Work Request Locations:12 Trims:5 Removals:15 Brush:0 Units:20 Previous Next
 Totals for all Work Request Locations:26 Trims:22 Removals:69 Brush:0 Units:91 Total Wrk Requests:4

4. CLICK on the **Select All** button at the bottom of the screen.

The Description and Assign To Options pop-up window appears.

Vegetation Management 2016 Combined First and Routine Patrol

3.2, Substep 4 (continued)

| Description (Work Request Criteria) | | | | Assign All |
|--------------------------------------------|-------------|------------|------------|------------------------------|
| Create Date: | 2/2/2016 | Circuit: | 0152241101 | Work Request #1 [1 to 29] |
| Division: | SI | SSD Route: | 100 | |
| ACC Type: | Maintenance | | | |

| Assign To Options | |
|----------------------------------------------------------------------------------|----------------------------------------|
| <input checked="" type="radio"/> Distribution <input type="radio"/> Transmission | |
| Local Office: | Sierra SI |
| Standing Ord Num: | 8170255 |
| *Contractor: | DAV |
| PMD Project Name: | HALSEY 1101 - 2016 - WEIMAR HALSEY - 6 |
| PMD Project Num: | 135088 |
| *Work Cat: | Routine Maint |
| Comments: | |
| 2016 FIRST PATROL | |

5. ENTER the following information into the pop-up window:
 - a. For **Local Office**, SELECT from the dropdown menu.
 - b. For **Contractor**, SELECT from the dropdown menu.
 - c. For **Work Category**, SELECT Routine Maintenance.
 - d. For **Standing Ord Num**, TYPE **8170255**.
 - e. CLICK within the **PMD Project Name** field to display a drop-down list AND SELECT the desired project name.
The system automatically fills in **PMD Project Number**.
 - f. For **Comments**, TYPE "2016 First Patrol."

- 3.3 ADD a note to the Project Management Database (PMD) project **Comment** field, indicating First Patrol and number of units generated.

Vegetation Management 2016 Combined First and Routine Patrol

4 DMS Provides Routine Report to Tree Crews

NOTE

When there is additional work at the current location, it is helpful to run a routine report for the tree crews so that they do not have to return to the same location.

4.1 IF there is other work at this location,

THEN Second Patrol data management specialist (DMS) RUNS a routine report AND PROVIDES the report to the tree crews.

END of Instructions

DEFINITIONS

NA

IMPLEMENTATION RESPONSIBILITIES

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

Vegetation management operations is responsible for the distribution of this procedure by providing training and conducting regular reviews.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

REFERENCE DOCUMENTS

Developmental References:

NA



Vegetation Management 2016 Combined First and Routine Patrol

Supplemental References:

NA

APPENDICES

NA

ATTACHMENTS

NA

DOCUMENT REVISION

NA

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager

DOCUMENT CONTACT

- For questions about patrol practices, contact [REDACTED] or [REDACTED] Vegetation Program Managers.
- For questions about the Project Management Database (PMD), contact the CEMA DMS.
- For system/IT questions, contact vegetation management user support at:
VegMgmtUserSupport@pge.com

REVISION NOTES

| Where? | What Changed? |
|--------|-------------------------|
| NA | This is a new document. |

EXHIBIT H-19-2

Vegetation Management Combined First and Routine Patrol

SUMMARY

First Patrol is an initiative to identify dead, dying, or declining trees during routine inspection and to list them separately from other routine work so that the cost for performing their tree work can be charged to the Catastrophic Event Memorandum Account (CEMA) budget. One mobile device is used for listing both First Patrol findings and routine work.

This procedure is intended for use on all circuits in Local, State, and Federal Responsibility Areas (LRA, SRA, and FRA). It addresses only dead, dying, or declining trees, or dead portions of trees, that have the ability to contact PG&E facilities in the event that they fail.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management governance and support personnel

Vegetation management operations personnel—North and South

Vegetation management patrols: pre-inspection (PI) and tree crew (TC) contractors

SAFETY

NA

BEFORE YOU START

NA

TABLE OF CONTENTS

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| 2 | CUF Adds Alerts for First Patrol | 2 |
| 3 | DMS Generates Work Request for First Patrol..... | 2 |

Vegetation Management Combined First and Routine Patrol

PROCEDURE STEPS

1 Scope of Work

1.1 The PI must LIST for First Patrol all dead, dying, or declining trees identified during routine patrol that require Facility Protect (FP) work, such as removal, major and minor trims, and FP overhangs, as described in [TD-7102P-08, "Facility Protect and Work Difficulty Procedure."](#)

2 CUF Adds Alerts for First Patrol

2.1 WHEN a consulting utility forester (CUF) identifies a tree that meets the First Patrol scope of work during a routine inspection,

THEN the CUF does the following:

1. ADDS an alert for First Patrol.
2. NAVIGATES to the tree record.
3. CLICKS on the **Dead/dying** box.
4. ENTERS all the tree information in the routine packet in the VM application in the same manner as routine units are entered.
5. CLICKS on **Alerts** within the tree record.
6. SELECTS **First Patrol** from the ALERTS LIST.
7. CLICK on **OK**.

The alert appears on the specific tree record.

3 DMS Generates Work Request for First Patrol

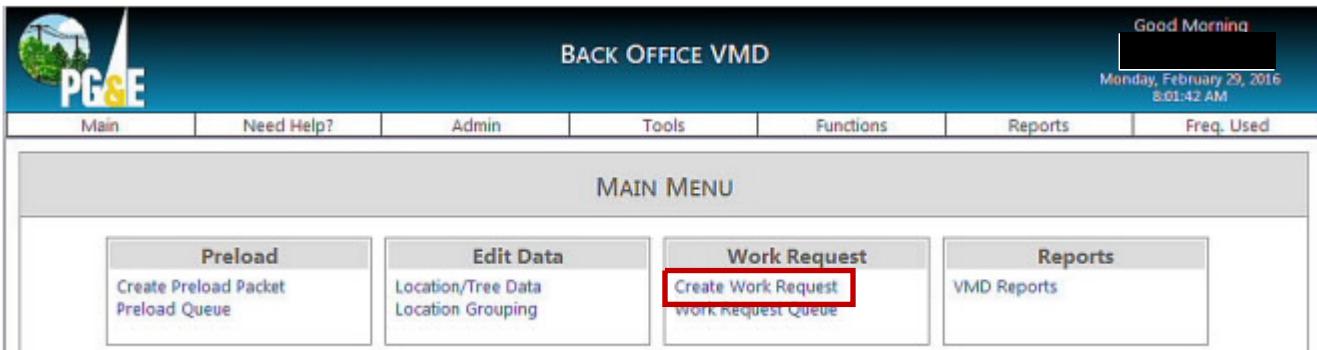
3.1 GENERATE separate work requests for trees listed with a First Patrol alert (trees requiring FP work), using the current year's Standing Order Number.

1. Generate all First Patrol FP trees first.

Vegetation Management Combined First and Routine Patrol

3.2 CREATE Work Request

1. In VMD under Work Request, CLICK on **Create Work Request**.



The Work Request (Query) screen appears.

2. FILL in the following fields:

- For **Sort**, SELECT **Circuit, SSD Route #, Loc. Routing #** from the dropdown menu.
- For **Division**, SELECT the division from the dropdown menu.
- For **Account Type**, SELECT **Maintenance**.



Vegetation Management Combined First and Routine Patrol

3.2, 2. (continued)

- d. For **Work Request Type**, SELECT **Distribution**.
- e. For **Tags**, SELECT **Non-tags and Tags**.
- f. For **Circuit Name**, SELECT circuit from the dropdown menu.
- g. For **Alerts (Trees)**, SELECT **First Patrol** from the dropdown menu.
- h. For **Trim Type**, SELECT all Facility Protect (FP) codes.

3. CLICK on the **Run Query** button at the bottom of the screen.

The results of the query appear.

Good Afternoon
Monday, April 11, 2016
2:16:53 PM

WORK REQUEST (PREPARE)

| Main | Need Help? | Admin | Tools | Functions | Reports | Freq. Used | | |
|-----------------------------|---------------------|-------|-----------------|-----------|---------|------------|-----------------------------------------------------------------------|------|
| Query | Prepare & Generate | Map | | | | | | |
| Work Request 1 of 4 | | | Not Ass | | | | | |
| Div: Sierra | Circuit: 0152481107 | | SSD Route: 4000 | | | | | |
| Circuit # | Area | Quad | SSD rte | County | # Trees | Address | Directions | Inst |
| 0152481107SEC 4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC 4D-3-AD4000NE | | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC-4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD ACCESS FRM BHND 16276 INDIAN FLA | |
| 0152481107SEC-4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC-4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC-4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>INDIAN FLAT RD; | |
| 0152481107SEC 4D-3-AD4000NE | | | 1.00 | | | | HWY 49>CEMENT HILL RD>WHISPERING OAKS; | |
| 0152481107SEC 4D-3-A | 4000NE | | 1.00 | | | | HWY 49>CEMENT HILL RD>WHISPERING OAKS; | |
| 0152481107SEC-4D-3-AD4000NE | | | 1.00 | | | | HWY 49>CEMENT HILL RD>GOCHINE DR>MT AUBURN DIRCLE; | |
| 0152481107SEC 4D-3-AD4000NE | | | 8.00 | | | | HWY 49>CEMENT HILL RD>GOCHINE DR>MT AUBURN CIRCLE; | |
| 0152481107SEC 4D-3-AD4000NE | | | 1.00 | | | | HWY 49>CEMENT HILL RD>GOCHINE DR; | |
| 0152481107SEC-4D-3-AD4000NE | | | 2.00 | | | | HWY 49>CEMFNT HILL RD> | |

Totals for This Work Request Locations:12 Trims:5 Removals:15 Brush:0 Units:20 Previous Next

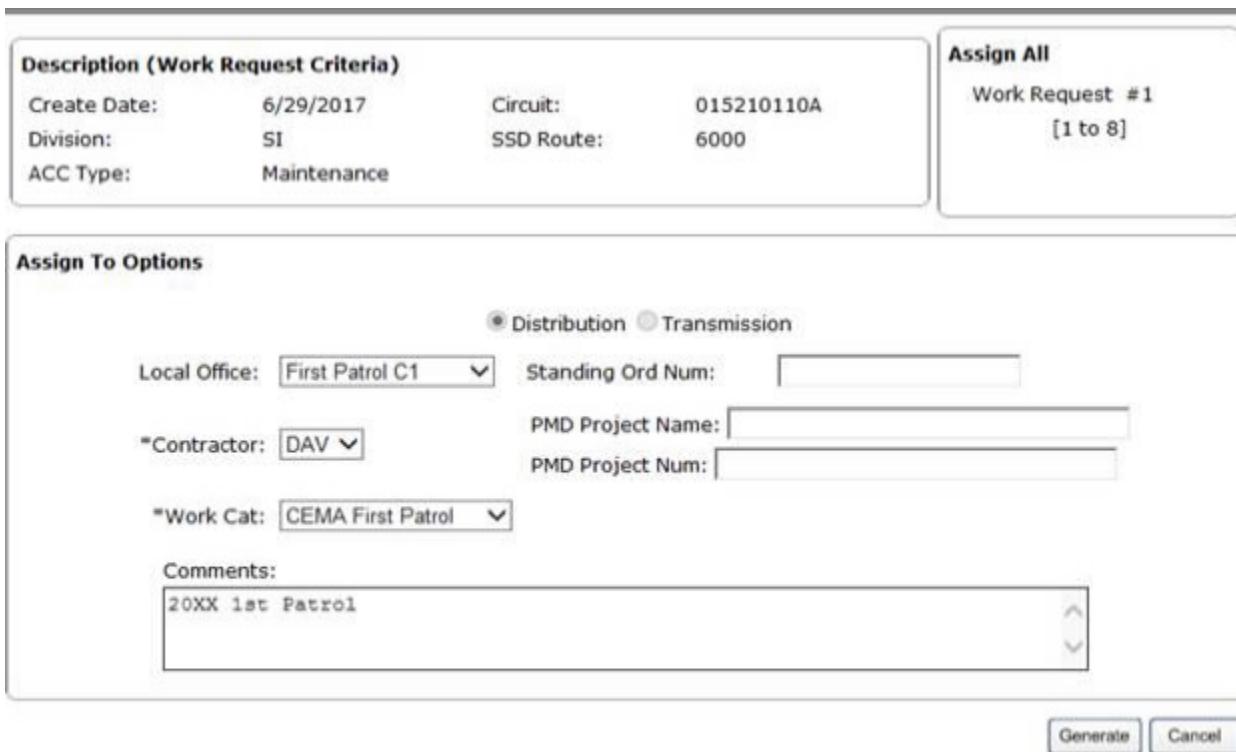
Totals for all Work Request Locations:26 Trims:22 Removals:69 Brush:0 Units:91 Total Wrk Requests:4

Vegetation Management Combined First and Routine Patrol

3.2 (continued)

4. CLICK on the **Select All** button at the bottom of the screen.

The Description and Assign To Options pop-up window appears.



Description (Work Request Criteria)

Create Date: 6/29/2017 Circuit: 015210110A
 Division: SI SSD Route: 6000
 ACC Type: Maintenance

Assign All
 Work Request #1
 [1 to 8]

Assign To Options

Distribution Transmission

Local Office: First Patrol C1 Standing Ord Num:
 *Contractor: DAV PMD Project Name:
 PMD Project Num:
 *Work Cat: CEMA First Patrol

Comments:
 20XX 1st Patrol

Generate Cancel

5. ENTER the following information into the pop-up window:

- For **Local Office**, SELECT **First Patrol C1** from the dropdown menu.
- For **Contractor**, SELECT from the dropdown menu.
- For **Work Category**, SELECT **CEMA First Patrol**.
- For **Standing Ord Num**, TYPE the current years order number.
- CLICK within the **PMD Project Name** field to display a drop-down list AND SELECT the desired project name.
 The system automatically fills in **PMD Project Number**.
- For **Comments**, ENTER current year for first patrol as **20XX First Patrol**.
- CLICK on the **Generate** button.

Vegetation Management Combined First and Routine Patrol

- 3.3 ADD a note to the Project Management Database (PMD) project **Comment** field, indicating First Patrol and number of units generated.

END of Instructions

DEFINITIONS

NA

IMPLEMENTATION RESPONSIBILITIES

The vegetation management document owner is responsible for the rollout and communication of this procedure, and for periodic review of this document.

Vegetation management operations department is responsible for the distribution of this procedure by providing training and conducting regular reviews.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard \(DVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

General Order 95, Rule 18, Section B

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7102P-08, "Facility Protect and Work Difficulty Procedure"](#)

APPENDICES

NA



Vegetation Management Combined First and Routine Patrol

ATTACHMENTS

NA

DOCUMENT REVISION

TD-7102P-24 Combined First and Routine Patrol, Rev.0

DOCUMENT APPROVER

[REDACTED] Manager, VM CEMA – Electric Vegetation

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager – VM CEMA South

DOCUMENT CONTACT

- For questions about patrol practices, contact James Brink or Kristyn Donellan, Vegetation Program Managers – VM CEMA.
- For questions about the Project Management Database (PMD), contact the CEMA DMS.
- For system/IT questions, contact vegetation management user support at:

VegMgmtUserSupport@pge.com

REVISION NOTES

| Where? | What Changed? |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure Title | Removed specific year. |
| Procedure Steps, Section 1 | Added direction to use TD-7102P-08, "Facility Protect and Work Difficulty Procedure" in scope of work. |
| Procedure Steps section | Changed specific Standing Order Number (8170255) to "the current year's Standing Order Number." Removed some screen images. Replaced "Description (Work Request Criteria)" screen. |

EXHIBIT H-20-1

Vegetation Management T & D Tree Trimming & Estimating Procedure

SUMMARY

This procedure describes processes for ensuring that applications for proposed line extensions, new PG&E overhead facilities, and reconstruction of overhead facilities contain plans and estimated costs for transmission and distribution vegetation work. This includes design, construction, and clearance requirements for trees and vegetation; and the necessary land rights to allow for required vegetation management activities at these facilities on an ongoing basis.

This procedure applies to the installation or reconstruction of overhead facilities in proximity to trees and other vegetation, including:

- EC tags, pole replacements, and Work at the Request of Others (WRO)
- New business line extensions and customer WRO
- Outage response
- Fire restoration
- Cost recovery projects
- Raptor protection projects
- Electric construction work assigned to contractors

After emergencies or the work listed above, the vegetation management department needs to be brought in to verify compliance with:

[California Public Resource Code \(PRC\) 4292](#)

[California Public Resource Code \(PRC\) 4293](#)

[CPUC General Order \(G.O.\) 95 Rule 35](#)

This procedure applies to both transmission and distribution for:

Electric Corrective (EC) Notification

Pole Replacement

PG&E Initiated Projects and System Transmission Projects

Agency Work at the Request of Others (WRO)

Emergency Response

New Business Line Extension or Service

Customer Requested Relocation job

Level of Use: Informational Use

Vegetation Management T & D Tree Trimming & Estimating Procedure

TARGET AUDIENCE

Vegetation management (VM) governance & support
VM operations
VM contractors, estimating arborists
Electric Distribution Estimators
Field engineer and field engineer technicians
Project managers
Encroachment support agents
Electric construction supervisors, crew leads, and contractors
New business representatives

SAFETY

- PG&E must approve the location selected for the utility service.
- To prevent injury and damage, all people, vehicles, equipment, and tools, must maintain a minimum 10-foot distance from all high-voltage power lines. This distance does not apply to line-clearance qualified workers or qualified electrical workers.

BEFORE YOU START

1. Obtain contact information for the estimating arborist(s) within your division from the VM department.
2. Review the [TD-7102P-27 VM Bird Nest Procedure](#) for state and federal regulations on working in areas containing birds of prey.

Vegetation Management T & D Tree Trimming & Estimating Procedure

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| 2 | Estimator and Job Owner Plan the Project | 4 |
| 3 | Estimating Arborist Reviews Job Site | 5 |
| 4 | Estimator and Job Owner Notify Land Department..... | 6 |
| 5 | EA, Estimator, and Job Owner Resolve Tree Conflicts | 6 |
| 6 | Estimator and Job Owner Process New Business or Customer Requested Relocation | 7 |
| 7 | Estimator and Job Owner Plan Route for Facilities..... | 7 |
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Vegetation Management T & D Tree Trimming & Estimating Procedure

PROCEDURE STEPS

NOTE

To see a flowchart of the overall process, click on Appendix A, Vegetation Process – EC Tags & Pole Replacement Flowchart

The Procedure Steps section refers to trees that are within 12 feet of an electrical conductor. For an explanation, see Appendix D, Why 12 Feet?

1 PG&E Personnel Inform VM of Emergency Work

1.1 WHEN an emergency response is required, such as for facilities that have been damaged by a storm or a vehicle,

THEN PG&E personnel must INFORM the local VM representative OR contract tree crew.

2 Estimator and Job Owner Plan the Project

2.1 IF the conductors are moving **2** feet or more from their current position,

AND the new positon of the wires are planned to be at least **12 feet** from all trees,

AND all conductors are planned to be at least 12 feet from any part of all trees,

THEN PROCEED with project design and planning.

2.2 IF the job **cannot** achieve 12 feet of tree clearance at all locations (without pruning trees),

THEN

1. REQUEST a site analysis by the estimating arborist (EA). A site analysis may include constructability concerns, recommending design alternatives, customer concerns, etc.

NOTE

The EA has 10 business days from the request date to schedule and perform a site analysis AND to issue the vegetation work.

The tree crew has 5 business days to schedule and complete the vegetation work.

- a. MAKE EA requests by email at least 15 days before the construction due date to allow enough time for the EA to schedule a site visit and issue vegetation work to tree contractor, and for the contractor to schedule and complete the work.

Vegetation Management T & D Tree Trimming & Estimating Procedure

2.2, 1. (continued)

- b. PROVIDE all necessary drawings, construction sketches, environmental alerts, and location data to the EA and land department. Include the type and size of cross-arm construction.
- c. NOTIFY the land department.

3 Estimating Arborist Reviews Job Site

3.1 EA ASSESSES the need for tree work.

- 1. IF cross-arm size OR transmission insulator size is **not** provided by estimating,
THEN

ASSUME standard framing for tangent cross-arm construction and standard transmission insulator size per voltage class.

- 2. IF tree conflicts can be resolved with pruning / tree removal,
THEN PROVIDE estimator and job owner with estimated tree costs.
- 3. IF tree conflicts **cannot** be resolved,
THEN
CONSULT with the estimator and job owner to determine whether alternate construction is possible.
- 4. IF alternate construction is possible,
THEN REDSIGN the job with the alternative construction;
OTHERWISE, proceed to 4. Estimator and Job Owner Notify Land Department, below.

3.2 EA REVIEWS design and site for non-exempt equipment.

- 1. IF **no** non-exempt equipment is found on the pole,
THEN PROCEED to 4. Estimator and Job Owner Notify Land Department, below.

- 2. CONFIRM with the estimator that exempt equipment is **not** an option.
- 3. IF exempt equipment is an option for construction,

THEN

- a. REDESIGN the job with exempt equipment.
- b. CHECK vegetation in the zone around the pole for compliance with PRC 4292.

Vegetation Management T & D Tree Trimming & Estimating Procedure

3.2, 3. (continued)

- c. IF non-compliant vegetation is found in the zone around the pole,
THEN
 - (1) NOTIFY estimator and job owner that there is non-exempt equipment on the pole.
 - (2) PROVIDE estimated clearing costs to the estimator and job owner.

4 Estimator and Job Owner Notify Land Department

4.1 IF clearance from the property line to the first conductor is **greater than 12 feet**,

THEN estimator and job owner DESIGN the job as agreed.

4.2 IF clearance from the property line to the first conductor is **less than 12 feet**,

THEN

- 1. REQUEST land department participation at locations where tree design alternatives are not feasible.
 - a. USE Vegetation Easement Language for requests to the land department for any parcels within 12 feet of the proposed conductors.
- 2. DESIGN project with land costs.

5 EA, Estimator, and Job Owner Resolve Tree Conflicts

5.1 EA, estimator, and job owner must RESOLVE all tree conflicts with construction alternatives or land acquisition.

5.2 IF the remaining tree conflicts can be resolved with alternative construction methods (including but not limited to: taller poles, alley-arm, limited-use vertical construction, overhead to underground, etc.),

THEN EA, estimator, and job owner must:

- 1. AGREE regarding the recommended type of construction at that location(s).
- 2. DESIGN a job that does **not** infringe on the 12 foot vegetation clearance.
- 3. When estimating, UTILIZE the [PM-2001P-038, "Electric Operations Project Management Job Walkdown Procedure"](#) to ensure M&C provides constructability feedback on proposed option.

Vegetation Management T & D Tree Trimming & Estimating Procedure

6 Estimator and Job Owner Process New Business or Customer Requested Relocation

6.1 When designing new overhead facilities or extending facilities, estimator and job owner ENSURE that:

- All conductors have at least **12 feet** of clearance from any existing trees.
- Adequate land rights for maintaining the tree clearance in the future have been obtained.

6.2 WHEN installing a new overhead line,
OR RELOCATING an existing line in response to a customer request, where the conductors need to be moved 2 feet or more from their current position,
THEN customer must REMOVE all non-compatible trees located directly underneath and within 15 feet from the center line.

6.3 IF right-of-way to adjoining properties along the proposed route might be required in the future to protect PG&E's right to trim trees,
THEN job owner REQUESTS land department to obtain rights.

6.4 IF the customer requests a route other the shortest practical route (as determined by PG&E),
THEN Estimator and Job Owner CATALOGIZE the additional facilities as special facilities.

6.5 Job owner does the following:

1. ENSURES that VM is included in the job walkdown.
2. FOLLOWS the [PM-2001P-038, "Electric Operations Project Management Job Walkdown Procedure."](#)

7 Estimator and Job Owner Plan Route for Facilities

7.1 IF trees are within 12 feet of the side clearance distance from the proposed conductors,
THEN estimator REQUESTS a site analysis by the EA, and PROVIDES drawings and location data.

7.2 IF the EA requests that the proposed route be staked,
THEN the estimator must STAKE the site within 10 business days of the request.

Vegetation Management T & D Tree Trimming & Estimating Procedure

7.3 IF the proposed new line crosses 3rd party property,
 OR the side clearance distance is within 12 feet of an adjoining 3rd party property line,
 OR the new line is along a roadway and within 12 feet of a 3rd party property,
 THEN the estimator CONTACTS the land department to establish easement rights, and
 PROVIDES the land agent with drawings and location data.

7.4 IF the land agent requests that the proposed route be staked,
 THEN the estimator must STAKE the site within 10 business days of the request.

8 Estimating Arborist Visits Site for New Business or Relocation

8.1 Estimating arborist VISITS the site within 10 business days, and does the following:

1. IF the proposed route is difficult to determine from the drawings,
 THEN
 - a. REQUESTS that the proposed route be staked by the estimator,
 - b. PERFORMS a site analysis including the following:
 - (1) DETERMINES which trees and vegetation are incompatible with the proposed route (including hazard trees).
 - (2) PROVIDES list of required tree work to customer.

9 Land Department Obtains Rights

9.1 Land department obtains rights for new business and customer requested relocations.

1. To see related flowchart, click on Appendix B, VM Process for New Business and Customer Requested Relocations Flowchart.
2. PREPARES easement documents to secure rights (on crossing and adjoining properties) to install the line or perform vegetation management activities.
 - a. IF 3rd-party property is involved,
 THEN the estimator and job owner NOTIFY the property owner / customer that 3rd party land rights are needed for the project and must be secured by the land agent before any facilities are installed.
3. ACQUIRES the necessary rights.
4. PROVIDES the estimator, job owner, and EA with a copy of the documented rights and land costs.

Vegetation Management T & D Tree Trimming & Estimating Procedure

9.2 Land department obtains documents for agency WRO projects.

1. To see related flowchart, click on Appendix C, Agency WRO Projects Flowchart.
2. PREPARES the easement documents necessary to secure rights for installing line and/or performing vegetation management activities on crossing and adjoining properties.
 - a. IF 3rd-party property owner / customer is involved,
THEN OBTAINS the approval and signature of the property owner / customer on land rights document(s).
 - b. IF the project requires Work at the Request of Others (WRO) or agency franchise relocations,
THEN the land agent may require that the Vegetation Program Manager (VPM) or Supervising Vegetation Program Manager (SVPM) reviews the proposed work before the work begins.
3. WHEN the required rights have been acquired,
THEN land department INFORMS the estimator and job owner and EA by providing a copy of the documented rights.

10 Estimator Designs Job and Job Owner Releases to Construction

10.1 Estimator does the following:

1. VERIFIES that the following items have been completed:
 - a. EA has provided site analysis with tree and/or clearing costs.
 - b. Tree crews have completed vegetation work.
 - c. Land agent has provided easement documents with land costs.
2. SPECIFIES the use of exempt equipment when exempt equipment is available and coordinates with the protection scheme.
 - a. DO NOT install non-exempt equipment when an exempt version of the equipment is available AND it coordinates with the protection scheme.
 - b. ENSURES that non-exempt equipment is replaced and called for in the job whenever possible.
3. DESIGNS the job with land costs.

Vegetation Management T & D Tree Trimming & Estimating Procedure

10.2 The job owner RELEASES the job to construction after:

- a. All necessary land rights have been acquired
- b. All necessary tree work has been approved by the EA.
- c. All tree work has been completed.



Violations of state law, injury to persons, and/or damage to property could result from energizing facilities before tree work is completed by property owner or customer.

1. Estimator and job owner INSTRUCT construction as follows:

Do not energize the facilities before property owner / customer completes tree work, OR if there is less than 12 feet of clearance from conductors, as fires or violations of state law could occur.



Under some conditions, such as in densely wooded areas, energizing a line could cause accidental injury, electrocution, or a fire.

2. IF conditions exist that could result in accidental injury, electrocution, or a fire,

THEN job owner INSTRUCTS construction to build the line, but to wait until the EA has performed a line-of-sight inspection and given approval before energizing the line.

END of Instructions

Vegetation Management T & D Tree Trimming & Estimating Procedure

DEFINITIONS

Estimating Arborist (EA): Contract arborists focused on assisting electric estimators, job owners, and M&C crews on re-construction and new business jobs by identifying and solving vegetation related issues. The EA patrols, and identifies and prescribes the tree work needed to build or re-construct electrical facilities in compliance with all regulatory requirements and/or PG&E vegetation management standards and procedures.

The EA's responsibilities include:

- Communicating to customers required tree work and brush removal needed to build electrical facilities in compliance with all regulatory requirements and/or PG&E vegetation management standards and procedures.
- Reviewing work in progress and completed jobs to ensure compliance with requirements.
- Providing estimators, job owners, and project managers with tree work costs for purchase order preparation.

Exempt equipment: Equipment that conforms to [California Public Resource Code \(PRC\) 4293](#).

Hazard trees: Any tree having a structural defect that could cause the tree, or a portion of the tree, to fall on someone or something of value.

Side clearance distance: The distance from a point directly under a single line system, or from the outside line of a multiple-line system to the edge of the preferred easement.

Vegetation Easement Language: The right, from time to time, to trim or to cut down any and all trees and brush now or hereafter within said easement area, including the further right, from time to time, to trim and cut down trees and brush along each side of said easement area, which now or hereafter, in the opinion of Grantee, might interfere with or be a hazard to the facilities installed hereunder, or as Grantee deems necessary to comply with applicable state or federal regulations.

IMPLEMENTATION RESPONSIBILITIES

The vegetation management team is responsible for the implementation, communication, and maintenance of this procedure.

The Document Owner issues training and compliance materials annually.

VM contractors are responsible for training all employees before they perform PG&E VM work and for providing documentation of this training.

All PG&E VPMs and VM contractors are responsible for knowing and complying with this procedure.



Vegetation Management T & D Tree Trimming & Estimating Procedure

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[California Public Resource Code \(PRC\) 4292](#)

[California Public Resource Code \(PRC\) 4293](#)

[CPUC General Order \(G.O.\) 95 Rule 35](#)

REFERENCE DOCUMENTS

Developmental References:

Estimating Bulletin: Tree Trimming Process 2002 – 03 R3, 9/28/06

Supplemental References:

[Construction Completion Standards Checklist](#)

[Document 061149, "Raptor-Safe Construction and Wildlife Protection"](#)

[PM-2001P-038, "Electric Operations Project Management Job Walkdown Procedure"](#)

[TD-7102P-27 VM Bird Nest Procedure](#)

APPENDICES

Appendix A, Vegetation Process – EC Tags & Pole Replacement Flowchart

Appendix B, VM Process for New Business and Customer Requested Relocations Flowchart

Appendix C, Agency WRO Projects Flowchart

Appendix D, Why 12 Feet?

ATTACHMENTS

The three Visio flowcharts below are stored as attachment files for future revision. See Appendices A, B, and C to view or print them.

[Attachment 1, VM Process for EC Tags and Pole Replacement](#)

[Attachment 2, VM Process for New Business and Relocations](#)

[Attachment 3, VM Process for Agency WRO and Other PGE Initiated Projects](#)



Vegetation Management T & D Tree Trimming & Estimating Procedure

DOCUMENT REVISION

"Tree Trimming Estimating UO Bulletin 2002-03 R2," 12/13/2002, Rev. 2

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management Operations

DOCUMENT OWNER

[REDACTED], Senior Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Senior Vegetation Program Manager

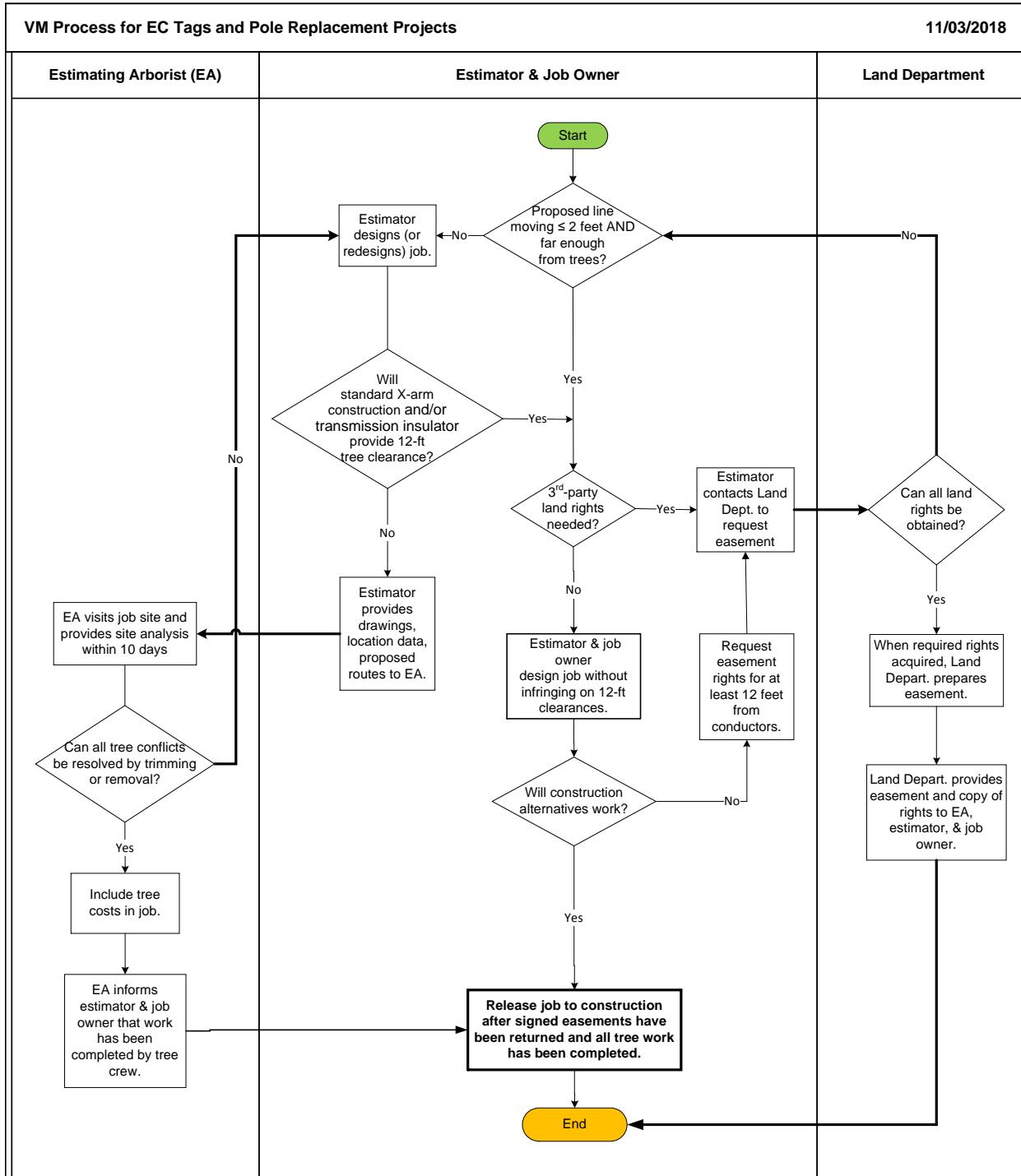
REVISION NOTES

| Where? | What Changed? |
|--------|-------------------------|
| | This is a new document. |

Vegetation Management T & D Tree Trimming & Estimating Procedure

Appendix A, Vegetation Process – EC Tags & Pole Replacement Flowchart

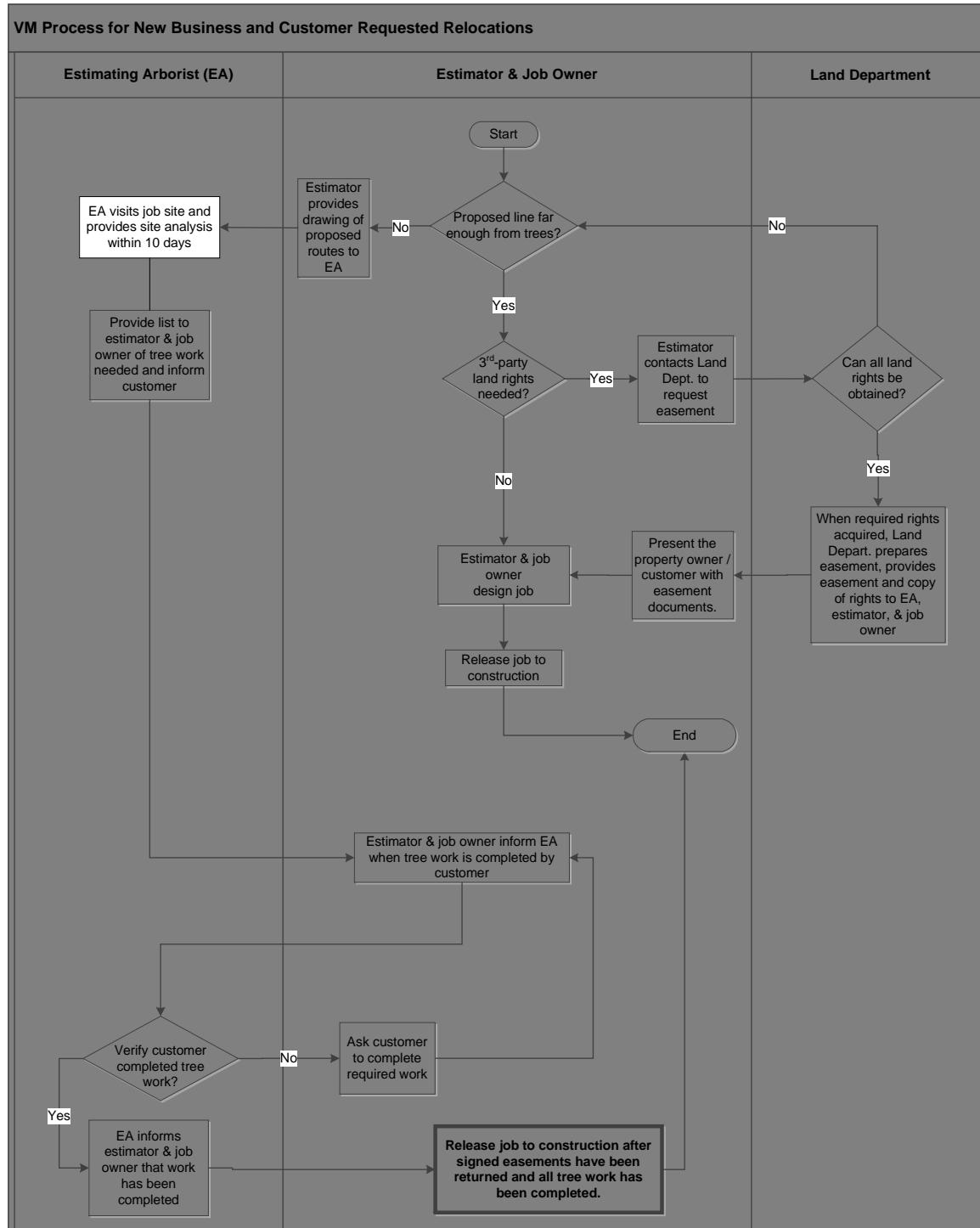
Page 1 of 1



Vegetation Management T & D Tree Trimming & Estimating Procedure

Appendix B, VM Process for New Business and Customer Requested Relocations Flowchart

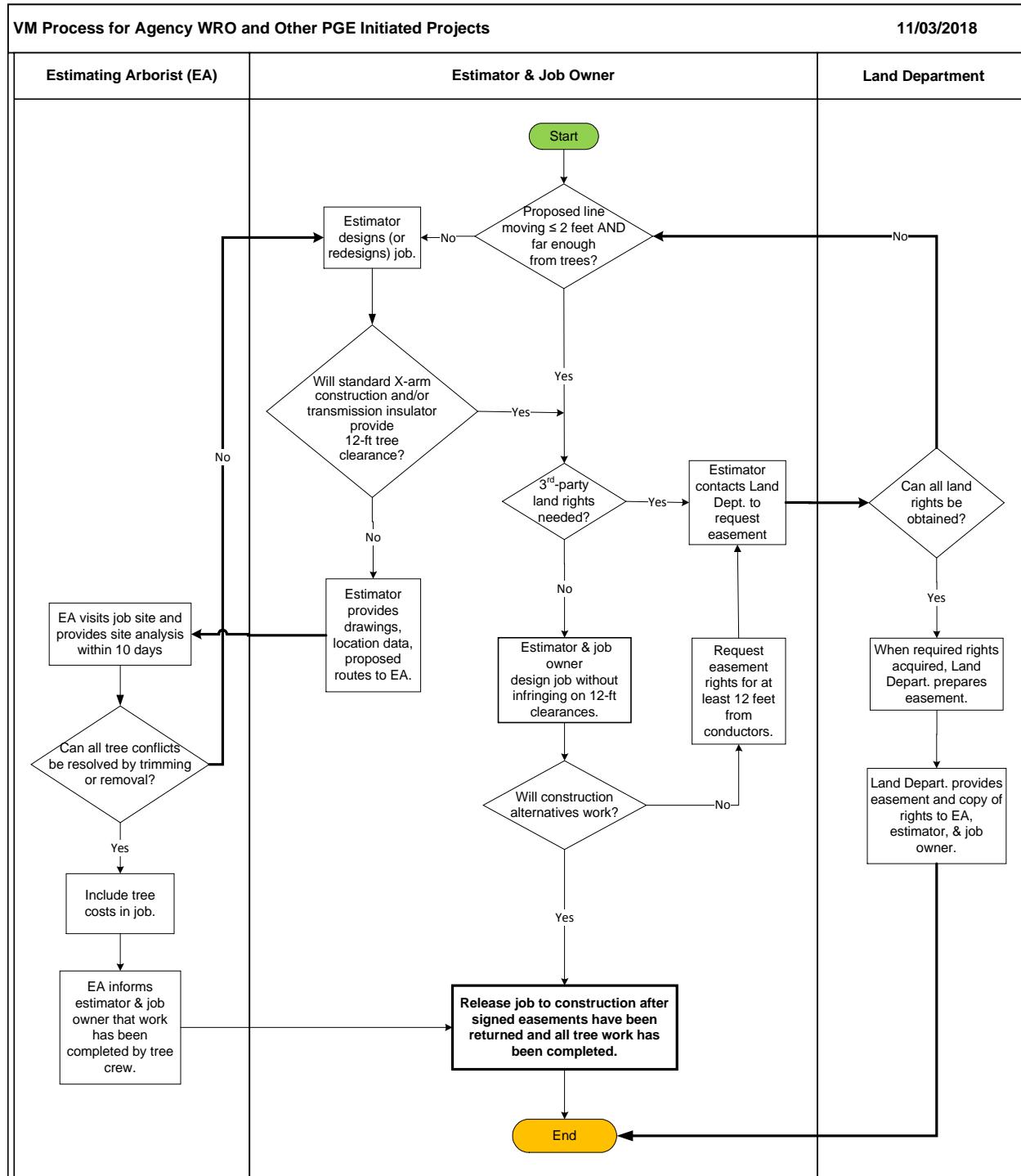
Page 1 of 1



Vegetation Management T & D Tree Trimming & Estimating Procedure

Appendix C, Agency WRO Projects Flowchart

Page 1 of 1

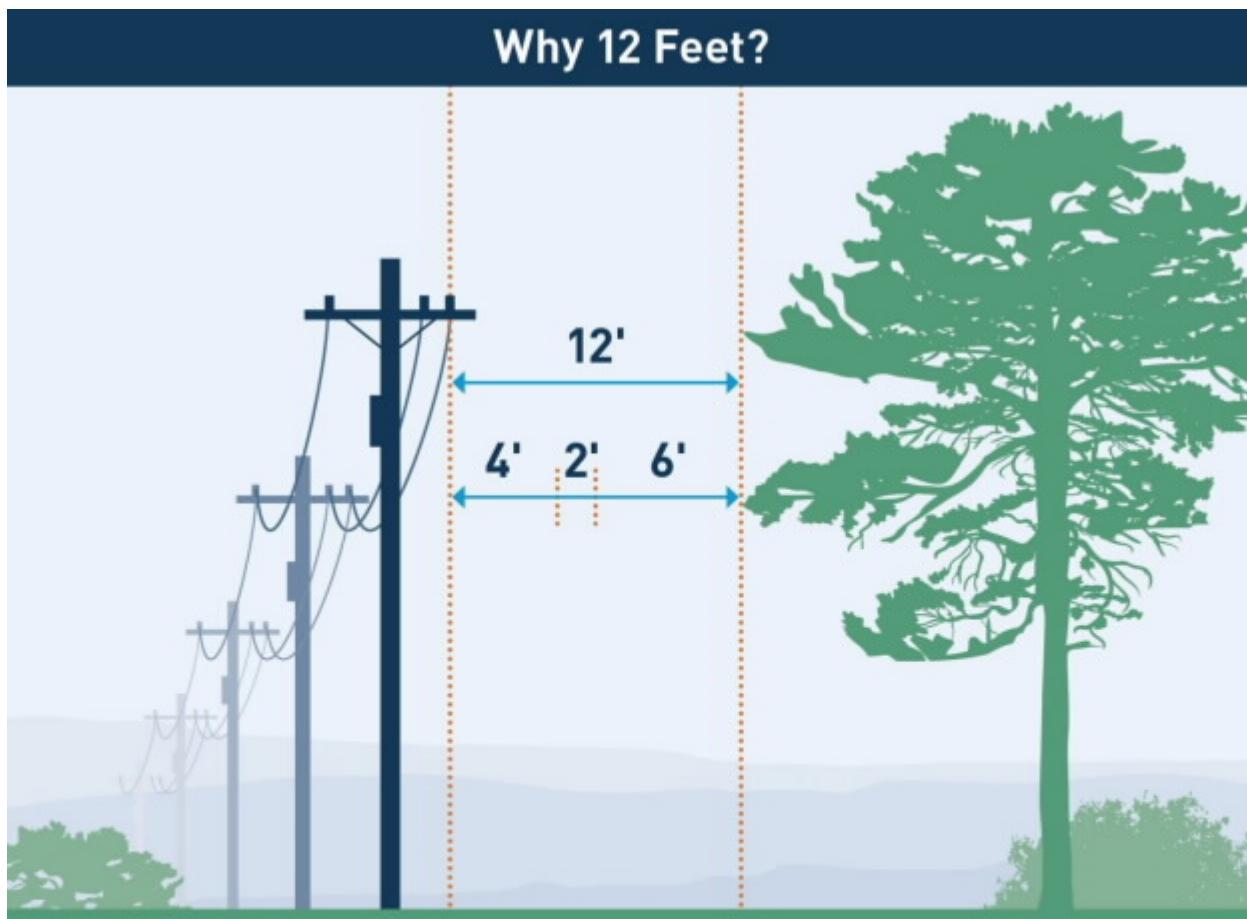




Vegetation Management T & D Tree Trimming & Estimating Procedure

Appendix D, Why 12 Feet?

Page 1 of 1



- **4 feet is required by law** – PRC 4293 (SRA) and GO 95 Rule 35 in High Fire Threat District (Tier 2, 3 and Zone 1)
- **2 feet is to allow for blowout** – movement of the line and/or tree (also required by law)
- **6 feet to allow for tree growth** – some species of trees can grow more than 15 feet a year
- **CPUC recommends 12 feet of clearance** at time of trim in High Fire Threat District (Table 1, Case 14)

EXHIBIT H-20-2

VM Process for EC Tags and Pole Replacement Projects

11/03/2018

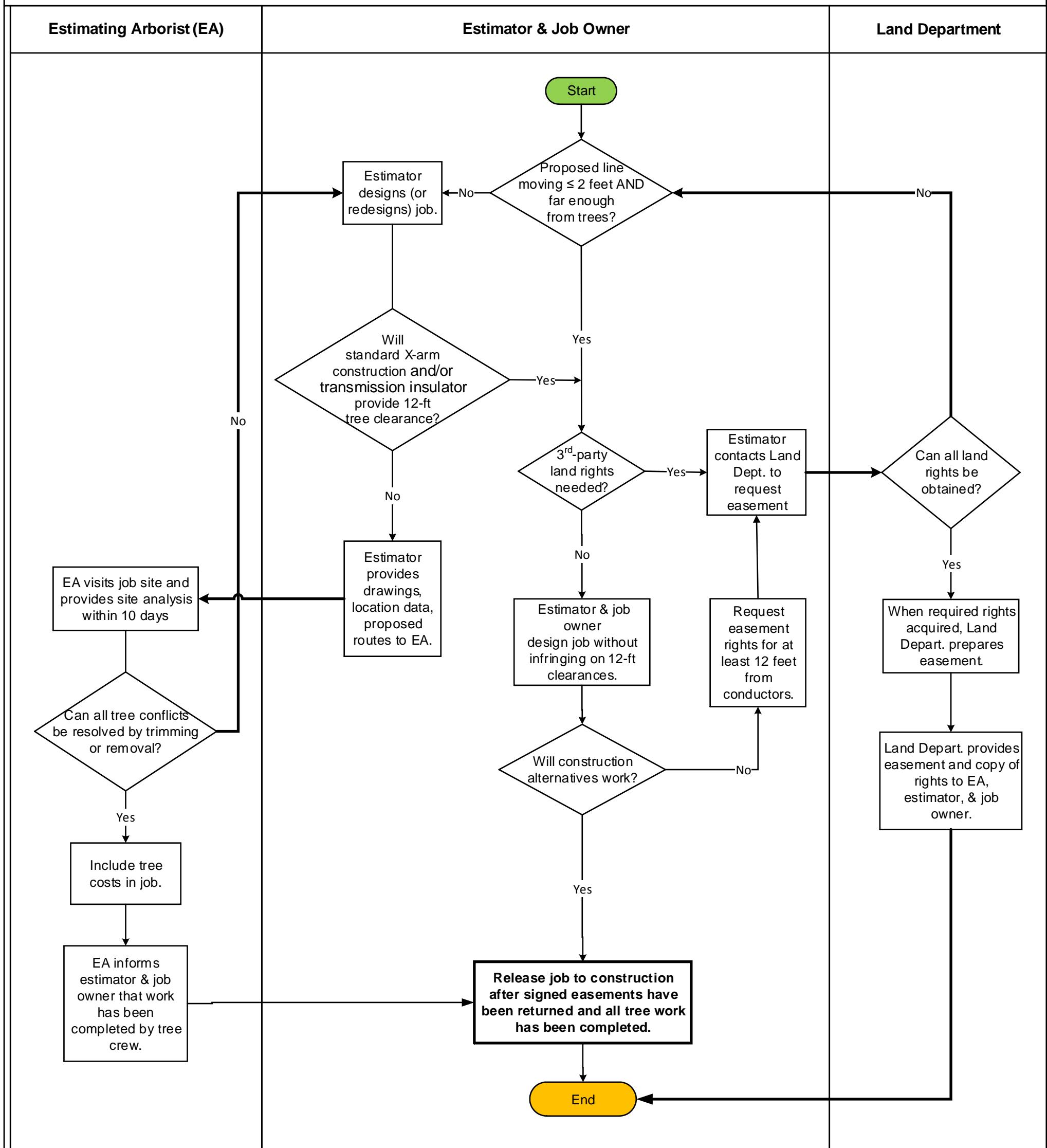


EXHIBIT H-20-3

VM Process for New Business and Customer Requested Relocations

10/03/2018

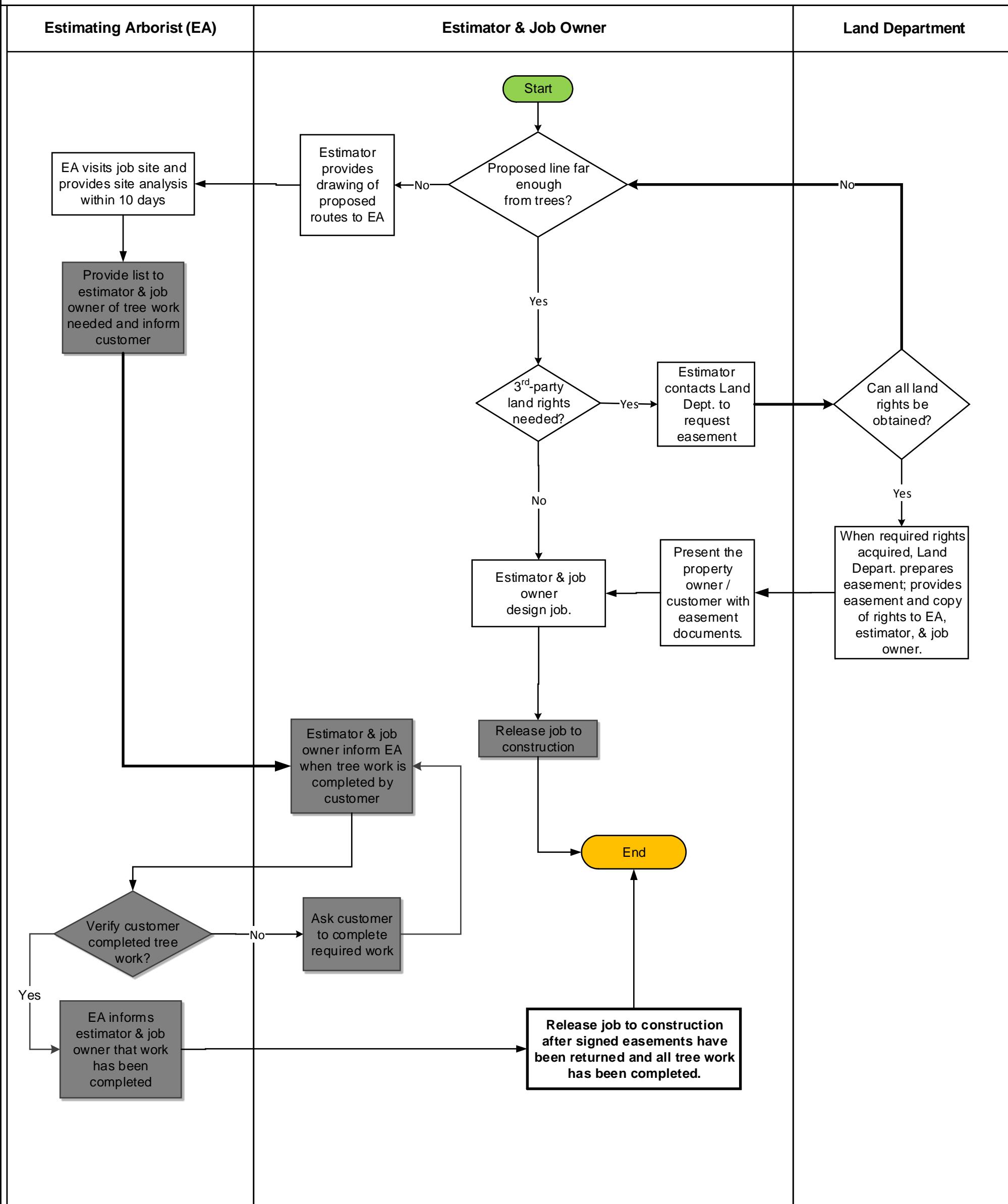


EXHIBIT H-20-4

VM Process for Agency WRO and Other PGE Initiated Projects

11/03/2018

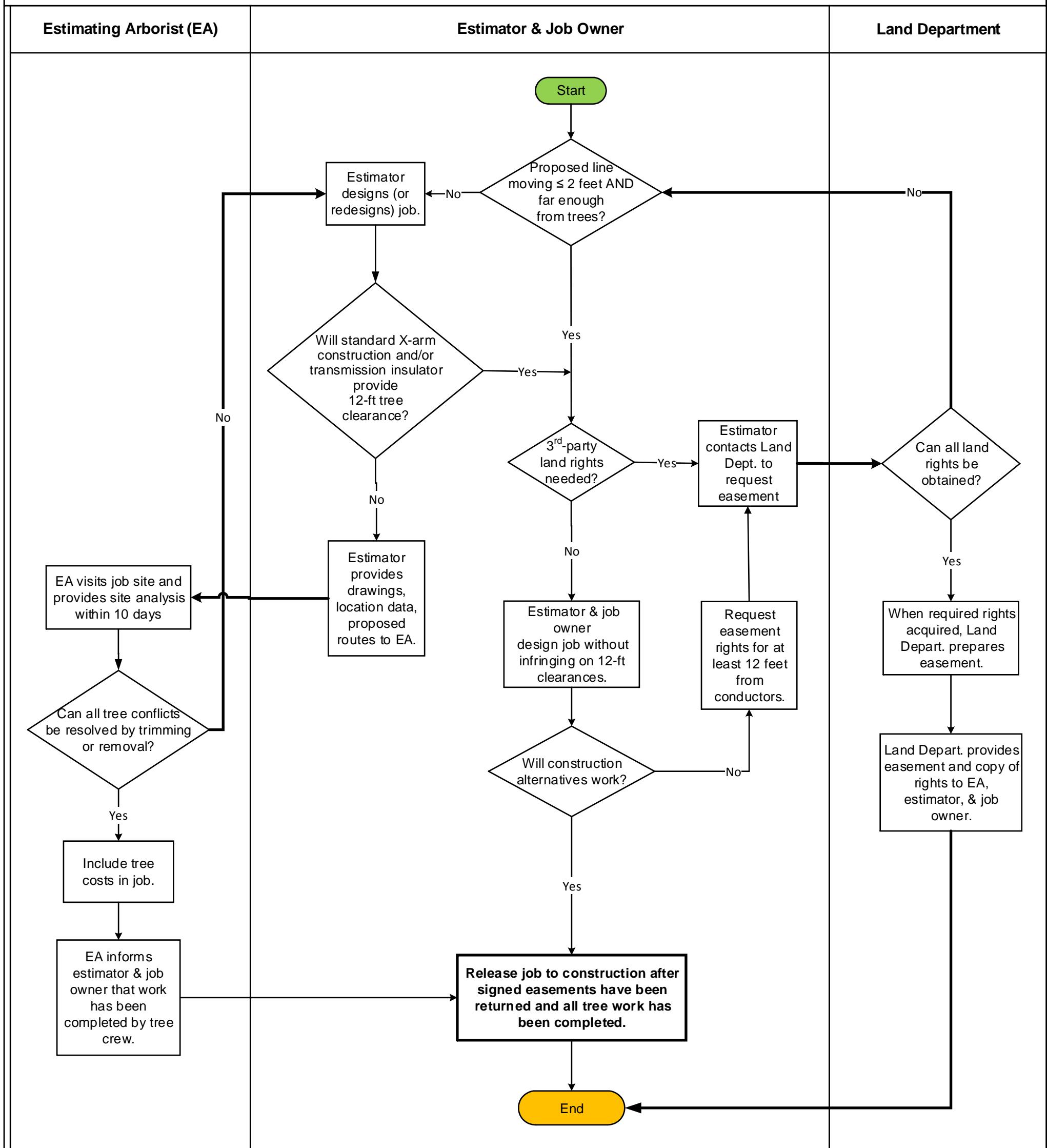


EXHIBIT H-21-1

| | | |
|-------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Vegetation Management | |  Pacific Gas and Electric Company |
| Distribution Patrol Standard | Created | 7/01/00 |
| Version 4 | Revised | 9/12/06 |
| Document Owner: VM Operational Excellence Team | Contact: [REDACTED] | Phone: [REDACTED] |

Distribution Routine Patrol Standard

Objective

Ensure the safe and reliable operation of all primary distribution circuits and secondary distribution lines. Meet state laws and regulations including General Order (G.O.) 95 rule 35 and Public Resource Code (PRC) 4293.

Definitions

Primary Distribution

- All conductors at or above the high voltage sign level (750 volts to 44 kV) are considered primary lines. This includes all primary neutral (PN), all line equipment lead wires and jumpers.

Underbuild

- The presence of distribution construction directly under and parallel with transmission construction.

Secondary Distribution

- All conductors below the transformer level are considered secondary lines. This includes common neutral and all wires originating from a transformer that lead to secondary wire.
- Pole to pole AWAC, Triplex and open wire conductors serving multiple customers are considered secondary and should be patrolled for existing strain and abrasion (GO95 Rule 35).

Service

- Pole/transformer to weatherhead conductors, regardless of construction type, serving only one customer are considered service lines and are the customer's responsibility.

Abrasion/Strain

- Damage to the conductor or insulation (not the tree) resulting from the friction between the tree and conductor. Scuffing or polishing of the insulating cover is not considered abrasion.
- Strain on a conductor is present when there is additional tension causing a deflection of the wire beyond the slack of the span.

Fused Tap

- A line section splitting off the main line protected by a fused cutout or other protection and ends at a dead-end or pole-top transformer.

Non-Fused Tap

- A line section splitting off the main line that is not protected by a fused cutout or other protection and ends at a dead-end or pole-top transformer.

Main Line

- A line section that begins at a Source Side Device (SSD) and ends at another SSD.

Scheduling

Perform full annual inspections of all primary distribution circuits, including stand-alone secondary distribution lines. Circuits to be covered by routine patrol shall be scheduled to be pruned on an annual basis by the Vegetation Program Manager (VPM) with input from the pre-inspection and tree pruning contractors based on the following factors:

- Last patrol date and duration
- Stakeholder feedback (contractors, M&C, ORT)

- Environmental restrictions
- Circuit criticality
- Outage statistics
- Accessibility
- Property owner activities (i.e., orchard harvesting)

Line inspection and trimming schedule durations should be planned so they can be reasonably completed within 30 days from start to finish. Factors to consider include circuit size, geography, tree density, limited operating periods, weather and resource availability. Lines may be segmented when it is not reasonably practical to complete work within 30 days. The PG&E representative (VPM/Forester) shall regularly review schedule status and approve durations that exceed 45 days.

Routine Patrol and Pre-Inspection Overview

Patrols shall be performed by qualified individuals on the ground from designated start to stop points (refer to area's circuit maps/files). Inspections shall include all vegetation with the potential to grow into or fall into the primary conductors before the next annual trim or which is currently causing strain/abrasion of the secondary conductors.

Minimum clearances to be maintained have been established as shown in Attachment A. (Minimum Distance Requirements). This is the minimum allowable tree to conductor clearance taking into account tree growth, line sag and sway, wind and tree sway. Trees which will not hold minimum clearance shall be prescribed for trim or removal using the guidelines set forth below.

Note: As a rule of thumb, the next annual trim should be considered to be 2 weeks after completion of circuit inspection. The PG&E Representative (VPM/Forester) has the discretion to vary from this assumption based on current year schedule status.

Work Prescription Practices

Pruning

- All pruning prescriptions shall be in accordance with ISA (2004) Best Management Practices-Utility Pruning of Trees – Special Companion Publication to the ANSI A300 Part 1.
- All pruning prescriptions shall be in accordance with the minimum clearances identified in Attachment A.
- Prescribed clearance should be sufficient to obtain 2-3 years of clearance and should be no less than 1 year before the next prune. If clearance to maintain 1 year compliance is not attainable, the tree shall be recorded as a bi-annual and discussed with the SCUF and/or VPM to determine if other actions are appropriate.
- Line sag, line sway and tree movement from wind shall be considered when identifying trees to be worked and prescribing clearance distances.
- Dead limbs overhanging the primary conductor shall be listed for overhang removal. Refer to section 15.5; Guidelines for Dead Limb Hazard Control in the Power Line Fire Prevention Field Guide.
- When a tree is being worked for current year compliance, in addition to compliance work, all overhanging branches shall be cleared to a minimum of 15', unless they qualify for the Major Woody Stem exemption.

Removal

- Trees of any DBH that will not hold compliance by pruning for a minimum of one year should be pursued as a removal.
- Trees less than 12-inch DBH should be removed rather than trimmed whenever possible.
- Trees equal to or greater than 12-inch and less than 24 -inch DBH should be considered for removal if it is not possible to obtain a 2 year clearance through pruning.

- Trees equal to and greater than 24 -inch DBH that are unlikely to encroach for a period greater than one year should be pruned rather than removed.
- Re-sprouting species shall be treated with an EPA-approved herbicide whenever possible.

Hazard Trees/Facility Protection

- Trees that are dead, show signs of disease, decay or ground or root disturbance that may fall into or otherwise impact the primary conductor shall be removed or made facility safe (see Facility Protect Procedure).
- Facility Protect trees that will impact only secondary lines are not a compliance issue (GO95 Rule 35, PRC 4293) and should not be routinely prescribed for work.
- Facility Protect trees on secondary lines whether identified through routine patrol, help tickets or EPCM tags shall be immediately communicated to local PG&E Representative to determine the appropriate course of action as discussed below.
- If the trees are not an imminent hazard, the customer should be notified that their tree may pose a potential hazard to the secondary facilities. If the trees are an imminent threat to public safety, they shall be addressed by trimming or removing them to protect the facility, or re-route the secondary line to mitigate the potential hazard.

Refusals and Restricted Clearance

A location where the property owner will not allow the prescribed work to occur is considered a refusal. The location shall be entered into the refusal database and the refusal procedure followed to resolution.

Patrol Practices

- Primary - Any tree deemed to potentially encroach within minimum distances required to maintain compliance with G.O. 95 rule 35, PRC 4292 and PRC 4293 before the next scheduled prune shall be listed for prune or removal (see Attachment A).
- Underbuild - Inspection of transmission lines with distribution underbuild shall be the primary responsibility of the distribution PI contractor and shall be conducted in accordance with the requirements set forth in the Transmission Routine Patrol Standard. Any compliance issues (dead trees, conductor clearances, etc.) observed by the transmission PI on the underbuild sections will be recorded in the handheld and issued to the transmission tree contractor. Any routine issues (overhangs, potential hazard trees, etc.) observed by the transmission PI on the underbuild sections will be forwarded to the distribution PI contractor, the VPM and Forester.
- Secondary - Secondary conductors with evidence of (current, not anticipated) strain or abrasion shall be addressed through tree pruning or re-construction as advised by M&C.

Idle Lines

- Idle or de-energized main line will be treated as if it is energized, and patrolled and pruned to maintain compliance for future use.
- If the circuit map identifies a tap line as “idle”, the line will not be patrolled or pruned. If the tap line is not identified on a circuit map, but is de-energized by a discontinuation of the conductor (jumpers either cut, removed, disconnected, or entire span removed) the line will not be patrolled or pruned. Unmapped idle tap lines will be documented with an Overhead EPCM tag and forwarded to the VPM/Forester as well as the appropriate OM&C Compliance Supervisor. A copy of the tag should be put in the active circuit folder for information during the next patrol. If an EPCM tag already exists, it is not necessary to create additional tags.
- Seasonally idle lines will be patrolled and pruned in accordance with G.O. 95 Rule 35 and PRC 4293. Examples of seasonally idle lines are: line that is de-energized every winter, except for irrigation season, etc.

Private Line

- Private lines identified on a circuit map or in the field are not to be patrolled unless a maintenance agreement exists. If VPM/Forester confirms that a maintenance agreement exists (through a record search conducted by Land Department), patrol and trim to routine patrol standards.
- If no maintenance agreement exists, and violations are noted through routine inspection, VPM/Forester should forward this information to the appropriate fire agency for that area (i.e., California Department of Forestry and Fire Protection, city fire department, Forest Service).
- Private line documentation should be placed in the circuit folder.

Attachment A**Minimum Distance Requirements**

| CPUC Rule 35 At all times (1) (feet) | PRC 4293 During fire season (1) (feet) | Potential Line Sag (feet) (2) |
|---------------------------------------------------|-----------------------------------------------------|---------------------------------------------|
| 1.5 | 4 | 1-4' |

- (1) Vegetation shall not encroach within the minimum distance at any time between inspection and one year or next scheduled trim.
- (2) Depending on span length, facility construction and conductor material, potential sag and sway can range from 1' at $\frac{1}{4}$ span to 4' at mid-span.

EXHIBIT H-21-2

Distribution Vegetation Management Standard (DVMS)

SUMMARY

The Distribution Vegetation Management (VM) Program has been designed and implemented to ensure safe and reliable operation of distribution facilities and to prevent vegetation foreseeable vegetation outages. In addition, the Distribution VM Program is designed to monitor compliance with state and federal laws and regulations including:

- CPUC General Order (G.O.) 95, Rule 35
- Public Resource Code (PRC) §4292
- Public Resource Code (PRC) §4293

TARGET AUDIENCE

- Vegetation Management Governance and Support
- Vegetation Management Operations
- VM Contractors: Pre-Inspection (PI), Tree Contractor (TC), Quality Control (QC), Quality Assurance (QA), Vegetation Control (VC)

SAFETY

PG&E and contract workers must review and follow all applicable safety standards and procedures before performing work, which includes review of tailboards and wearing appropriate Personal Protective Equipment for the job.

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Distribution Vegetation Management Standard (DVMS)

REQUIREMENTS

1 Program Overview

1.1 Program Description

1. The Distribution VM Program consists of many different programmatic elements that intended for the safe and reliable operation of primary distribution circuits and secondary distribution lines, while complying with state laws and regulations including G.O. 95, Rule 35; PRC 4292 and 4293.

1.2 Program Strategy

1. The Routine VM program strategy is to perform an annual patrol and complete identified tree work on all overhead primary and secondary distribution facilities to maintain radial clearance between vegetation and conductors, and identify trees that will encroach within PG&E's minimum distance requirements (see Appendix A, Minimum Distance Requirements (MDR)) and hazard trees which have the potential to strike the conductors.
2. This approach allows for ongoing monitoring of vegetation conditions to prevent encroachment into the MDR, reasonably foreseeable outages and possible fire ignitions.
 - a. Quality Assurance (QA) performs scheduled audits throughout the year, regardless of planned, pending, and completed inspection and tree pruning and removal work, to ascertain compliance with CPUC GO 95, Rule 35 and PRC 4293. Reporting on-going and relevant QA information allows for opportunities to take appropriate corrective action and to address gaps in processes and procedures.
 - b. Quality Control (QC) monitors contractor work performed in the routine VM program. QC provides for on-going review of contractor work, relative to PG&E contract specifications and VM standards and procedures. Reporting on-going QC information related to strategic VM goals allows the opportunity to take appropriate corrective actions and to address gaps in processes and procedures.

1.3 Minimum Distance Requirements (MDR)

1. G.O. 95, Rule 35 and PRC 4293 require that utilities maintain minimum clearance distances between energized distribution conductors and vegetation. Appendix A displays a table and guidelines for determining Minimum Distance Requirement (MDR) to maintain separation between vegetation and distribution conductors in Local Responsibility Areas (LRAs) and State Responsibility Areas (SRAs).

Distribution Vegetation Management Standard (DVMS)

1.4 Notification of Hazardous Condition

1. Transmission and Distribution Hazard Notification (HN) Procedure provides guidance for notifying and mitigating any vegetation condition which, under observed conditions, shows evidence of contact with a distribution conductor or has the potential to become an imminent threat.
2. This HN Procedure applies to all VM employees and VM contractors. The vegetation condition may arise from encroachment from growing vegetation or potential failure of limbs or trees, within or outside of the Right-of Way (ROW).

2 Routine Vegetation Management

2.1 Program Description – Routine

1. As described in the Distribution Routine Patrol Procedure (DRPP), Pre-Inspection (PI) contractors perform an annual patrol of all overhead distribution circuits, including stand-alone secondary lines.
 - a. Patrols are performed by PI contractors, and the prescribed work is completed by the Tree Contractors (TC). When trees are present along the distribution line, a ground patrol is required to inspect the trees. However aerial patrols may also be used, including aerial patrols using Light Detection and Ranging (LiDAR).
 - b. During the patrol, the PI identifies and prescribes work for trees that could grow into the MDR, and trees or portions of trees that could fail and make contact with conductors.
 - c. Trees identified for work are issued on a Work Request to TC. Work completion is monitored by VM staff with additional validation through QC.

2.2 Planning and Scheduling

1. Detailed planning for the VM DRPP is conducted in the third and fourth quarter of each year for the following year. The detailed planning process includes forecasting the number of units that will be worked on each distribution circuit or project, and setting the following years' schedule.
2. Workload is forecasted using historical data on units worked in prior years, historical data on volume of trees pruned, and knowledge of local site conditions. After the current-year forecast is developed, the schedule for the year is determined, taking into consideration the following factors:
 - Last patrol date and duration
 - Line criticality

Distribution Vegetation Management Standard (DVMS)

- Outage statistics
- Tag statistics
- Environmental restrictions, e.g. limited operating periods
- Stakeholder (contractor) feedback
- Accessibility (snow, flooding)
- Property owner activities (e.g. orchards)
- Distribution circuit length and tree density
- Resource availability

3. By following the Project Management Database (PMD) Standardization Guidelines (Dec. 2015) and with VPM approval, circuits and line sections may be segmented or combined into unique PMD projects.

4. The following are situations where unique PMD projects are considered:

- Highway projects
- Agency Projects (USFS, BLM)
- Geographic / District / Administrative Boundaries
- Orchards

NOTE

Commercial orchards are planned as "Orchard Projects", and as a separate segment or project from non-orchard patrols. Whenever possible, VM contractors schedule distribution and transmission orchard work at the same property or corridor and coordinate schedules using PMD along with other considerations such as seasonal restrictions, and harvest schedules.

- a. Once the plan is finalized, all distribution line sections and their associated forecasts are entered into PMD.
- b. PMD is used throughout the year to monitor work progress and work completion status.

Distribution Vegetation Management Standard (DVMS)

2.3 Work Practice and Procedure

1. Pre-Inspection and tree work is performed in accordance with PI Contract Specifications, TC Contract Specifications and Distribution Routine Patrol Procedure.
2. Pre-Inspection
 - a. As described in the Distribution Routine Patrol Procedure, PI inspects all vegetation, both inside and outside of the ROW, which has potential to grow into or fall into distribution conductors.
 - b. PI is required to use MDR to determine the minimum allowable clearance distances, and prescribe tree work accordingly.
 - c. Once a tree is identified for work, the work prescription must consider local conditions which will occur prior to the next patrol. Local conditions may include, but are not limited to:
 - Reasonably anticipated tree and conductor movement
 - Species types and growth rates
 - Species failure characteristics
 - Local climate and rainfall patterns
 - Line terrain and elevation
 - Location of the vegetation within the span
 - Worker approach distance requirements
 - Snow load
 - d. Trees identified by PI as requiring work are entered into a handheld device. Upon completion of the field inspection, the handheld data is downloaded to the Vegetation Management Database (VMD)
3. Work Completion – Tree Pruning and Removal
 - a. Work identified by PI is issued to TCs as Work Requests generated through VMD.
 - b. A Work Request identifies the work practice and work methodology most appropriate to the work location. Routine tree pruning work assigned solely by Work Request is performed as selective manual removal or pruning of individual trees in and along the ROW.

Distribution Vegetation Management Standard (DVMS)

- c. When the assigned tree work is complete, the Work Request is closed out in VMD, and the PMD project for that distribution line is updated as completed.
4. Refusals
 - a. PG&E will follow the Distribution Vegetation Refusal Procedure for all locations and incidents that result when work is constrained by external factors such as:
 - Environmental Review or further work with a government agency.
 - Customer refuses to allow VM access to property or hinders the ability to perform the work necessary to maintain compliance on distribution lines and facilities.
5. Work Completion Status
 - a. VM PMD is a software application, used for monitoring work status, adjustments to workload forecast, resources or and adjustments to the work schedule.
 - b. At the end of the planning process, information on distribution patrols is entered to PMD with a unit forecast and a planned start / completion date.
 - c. The work completion progress on each "Open" distribution patrol is updated weekly, and forecasted completion dates are adjusted as needed. When a line is reported as work complete by PI or TC, the date is entered as actual completion to PMD.
 - d. PMD has scheduling status reports which allow a Program Manager to monitor work completion and make resource adjustments.
 - e. PMD forecast and actual completion dates are used to document modifications to the annual work plan.
6. Quality Control
 - a. Monitoring PI and TC work performance is conducted by a separate QC contractor, described in the Quality Control Program section of this document.

Distribution Vegetation Management Standard (DVMS)

3 Vegetation Control (VC) Program

3.1 Program Description

1. Vegetation Control (VC) is the PG&E system wide program of patrolling, identifying, prescribing work, conducting work, and documenting work around subject poles and towers to maintain compliance with California Public Resource Code (PRC) 4292 as well as PG&E standards.
2. Subject poles are those poles and towers with specific equipment in designated areas. During the declared fire season, the utility is required to maintain 10 feet of radial clearance and 8 feet of vertical clearance from vegetation that could allow the fire to spread at the base of subject poles and structures.

3.2 Planning and Scheduling

1. The VC program's project year generally runs from October through the following September. The location and number of subject poles is stable; the annual work plan is based on the geographical locations of the subject poles and historical knowledge relative to the timing of fire season. An annual work plan is developed by the VC contractor and submitted to Sr. Vegetation Program Manager overseeing VC, for approval by September 15th of each year.
2. PI and VC work is scheduled based on a combination of the work activity needed and the anticipated date for fire season declaration.
 - a. Subject poles where the property owner / land manager allows application of herbicide must be pre-inspected from October through March; the subject pole will be cleared and herbicide applied at the time of inspection.
 - These poles will be inspected a second time between May and August and re-cleared of vegetation as needed.
 - b. Subject poles where the property owner / land manager will not allow application of herbicide are pre-inspected from October through March; the pole is cleared from March through June, depending on the start of fire season.
 - These poles must be inspected a second time between May and August and re-cleared as needed.
 - Between the months of July through September, these subject poles are re-inspected a third time and cleared of vegetation as needed.

Distribution Vegetation Management Standard (DVMS)

3.3 Planning and Work Practice

1. VC maintains an inventory of all distribution subject poles that require clearing. An annual patrol is conducted generally between the months of October through March, with work prescribed at each location.
 - a. When the prescribed work is to clear and treat the area around the subject pole / tower with herbicides the work is done during the patrol.
 - b. When the prescribed work is to clear the pole / tower without use of herbicides, the work is conducted generally between the months of April through June.
 - c. All distribution subject poles / towers are re-cleared as needed between the months of May through August.
 - d. Every distribution subject pole / tower has an associated annual record that documents the patrol and work completed.

3.4 Work Completion

1. Bi-weekly, the VC Contractor provides a report of completed VC work on subject poles to the Sr. Vegetation Program Manager overseeing the VC Program. These reports are compared against the original plan and the projected fire season to monitor status and to adjust forecast schedule, if needed.
2. As Work Requests are completed by the VC contractor, they are documented in the Pole Clearing Database (PCD) as completed locations.

3.5 Quality Control

1. VC work is monitored and audited by sampling, and reviewed for work complete and compliance with PRC 4292 by QA and QC Quality Programs.

Distribution Vegetation Management Standard (DVMS)

4 Quality Control (QC) Program

4.1 Program Description

1. The QC program monitors contractor work for accuracy, quality, and contractual conformance.
2. To maintain appropriate separation, audits are performed by a separate third-party contractor whose only function in the VM Program is Quality Control.
3. There are three primary types of QC audits:
 - Review of PI work complete
 - Review of TC / tree removal work complete
 - Mid-cycle reviews
4. Work complete audits verify conformance of completed contractor work to VM contract specifications and VM work procedures.
5. During mid-cycle reviews, QC audits line sections to assess whether contractor work was sufficient to maintain regulatory compliance.

4.2 Work Practice and Procedure

1. QC work is performed in accordance with VM contract specifications and VM standards and procedures. The progress of QC work is monitored on an ongoing basis by the Sr. Quality Assurance Specialist overseeing the QC Program.

4.3 Work Identification and Completion

1. For Routine VM Program, PI and TC work complete audits; audited distribution circuit locations are selected from a computer-generated, randomized list of locations. Sample locations are reviewed by the auditor after completion of PI and TC work.
 - a. Auditor completes the field audit by answering a pre-determined set of questions on work quality at each sample location.
 - b. Review findings are sent to VM Operations.
 - c. Corrective actions are pre-determined and assigned by the QC database to local operations.
2. Mid-cycle line section audits are performed on sections of distribution lines that were worked during routine maintenance, at least five months prior to the audit date.

Distribution Vegetation Management Standard (DVMS)

- a. The start point of a line section review is selected from a computer-generated list of randomized Source Side Devices (SSDs) on those circuits that meet the time criteria.
- b. The auditor completes the audit in the field by identifying any hazard trees which may fail prior to the next scheduled cycle and any trees that will not hold MDR until the next scheduled patrol / pruning.
- c. The auditor documents findings on field data sheets which are forwarded to local VM Operations.
- d. As needed, local operations sets requirements for corrective action by the PI or TC.

3. VC audits are performed on a random, representative set of PI and VC work complete distribution subject poles in each division.

- a. The auditor completes the audit in the field by answering a pre-determined set of questions on work quality at each sample location.
- b. When the field review for a VC work complete audit is finished, the auditor forwards the findings to the Sr. Vegetation Program Manager overseeing the VC Program.
- c. As needed, Sr. Vegetation Program Manager overseeing VC will set requirements for corrective action by the VC contractor.

4.4 Quality Control - Contractor

1. The QC contractor has an ongoing internal quality control process. On a monthly basis, each QC field technician will have one completed audit reviewed by a QC Supervisor.
2. QC Management will require internal corrective actions when necessary.
3. QC Management will schedule quarterly meetings with the Sr. Quality Assurance Specialist overseeing QC to analyze review processes.

5 Quality Assurance (QA) Program

5.1 Program Description

1. The QA program consists of a team of QA Specialists located throughout the PG&E service territory who perform scheduled audits throughout the year, regardless of planned, pending, or completed inspection and tree pruning / removal work, to ascertain a true "real-time" condition of the system.
 - a. QA performs an annual assessment to identify areas of higher potential risk, and develops an annual audit plan. Audits are conducted to measure compliance with G.O. 95, Rule 35; PRC 4292 and PRC 4293.

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- b. Each audit process uses statistical sampling methods and randomly selects portions of the overhead system to audit for compliance. The auditors perform root-cause analysis on observed compliance issues and any approaching non-compliances, identify trends, and report the results to the Department Director, the Operations Manager, Supervising Vegetation Program Manager (SVPMP) and the area Vegetation Program Manager (VPM).
- c. The Supervising Vegetation Program Manager (SVPMP) is responsible for taking action to correct identified deficiencies, and communicating required corrective actions to the contractors.
- d. IF a recurring or systemic issue is identified, then VM Operations, working in conjunction with QA, develops a Corrective and Preventative Action Plan (CAPA) for its contractors to reduce or prevent recurrence.

5.2 Planning

1. The QA annual work plan is developed annually. Developing the audit plan includes consideration of:
 - Voltage levels
 - Mileage (exposure)
 - Historical VMD tree count by division or area
 - Forecasted tree count by division or area for the upcoming year
 - Historical QA audit results by division or area
 - Contractor make up or recent contract changes
 - Recent changes in process or procedures
2. Operations and Governance and Support Managers are solicited for input; the final annual plan is reviewed and authorized by the Department Director.

5.3 Scheduling

1. QA audits are performed by the Quality Assurance Specialists (QAS). Each QAS is responsible for scheduling and conducting distribution audits in their areas of responsibility and within the parameters of the annual work plan.

5.4 Work Status

1. Each QA audit has an associated Audit Plan which defines the scope and projected timeline of the audit.

Distribution Vegetation Management Standard (DVMS)

2. Status and work progress monitoring is conducted through weekly update reports which is provided to the QA Program Manager, Operations, and Governance and Support Managers and the area SVP.
3. The weekly report also provides work complete percentages, preliminary findings and any critical observations.

5.5 Work Practice and Procedure

1. QA audit practices are consistent with ANSI/ISO/ASQC Q10011 Guidelines for Auditing Quality Systems. A standardized distribution audit process is used that addresses planning, performing, analysis, reporting, communications, corrective action, and follow-up.
2. Each audit is independent of the operations work stream and includes all lines and poles in the audit population regardless of the operations work plan.
 - a. Random sampling is used to ensure a statistically valid representation of the audit area.
 - b. Audit areas are stratified by voltage level; audit locations are randomly selected (MS EXCEL random number generator) and reviewed prior to field work by using satellite and aerial photographic images available through PG&E's Geographic Information System (GIS) and Google Earth.
 - c. Where available, LiDAR data may also be reviewed and used as part of the audit process.
3. Audit transects are entire SSDs including hard taps; the auditor evaluates all vegetation under and adjacent to the audit line.
 - a. In the field, the auditor uses field data sheets to identify and document trees or vegetation that:
 - (1) Are non-compliant with regulations
 - (2) May become non-compliant prior to the next pruning cycle
 - (3) Exhibit signs that may indicate a potential failure into overhead facilities
 - b. Field data sheets are provided at least weekly to the VPM and SVP as notice of existing non-compliant locations.
4. Upon completion of field work, the auditor performs a root cause analysis for any non-compliant or projected non-compliant locations. A final report is submitted to and reviewed by the QA Program Manager. The QA Program manager submits the final report to department Director.



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5. Upon receipt of the final report, the SVP must develop and complete an appropriate CAPA.

5.6 Quality Control

1. The QA program has three activities to maintain QC for their work performance:
 - a. Detailed audit processes and flow charts are used to maintain consistency within the QAS group.
 - b. The QA Program Manager performs periodic evaluations of the audit preparation, related field work and any root cause analysis performed by the QAS.
2. All reports are reviewed and approved by the QA Program Manager and authorized by the department Director.

END of Requirements

Distribution Vegetation Management Standard (DVMS)

DEFINITIONS

Aerial Patrol – Use of a helicopter or other aircraft with or without LiDAR capability for the purpose of visual inspection of vegetation.

Distribution Underbuild – The presence of electric distribution lines located directly under and parallel with the transmission lines, and attached to the same pole or structure.

Easement (or Right of Way) – For the purposes of this Standard it is the as-built condition of a geographically described strip of land upon which PG&E's electric facilities are constructed, operated and maintained. "Easement" refers specifically to the legal description of that corridor.

Hazard Condition – A vegetation condition affecting transmission or distribution lines which does not pose an imminent threat, but where the condition has the potential to become an imminent threat and is at or encroaching the PG&E clearance distance.

Hazard Trees - Any tree whose height is at or approaching the PG&E Minimum Clearance Requirements (Appendix A).

- **All lines:** Trees that are dead, show signs of disease, decay or ground or root disturbance, which may fall into or otherwise impact the conductors, towers or guy wires before the next inspection cycle.

Light Detection and Ranging (LiDAR) – Technology used to determine vegetation conditions, predominantly distances and clearances, in relation to the electric conductors and easement boundaries.

Minimum Clearance Requirement – PG&E defined minimum clearance designed to meet or exceed all applicable regulatory requirements at all times.

Orchard – Any commercial-producing orchard. Only includes trees that are part of the production crop.

Orchard Tree – Any commercial-producing fruit or nut tree that is part of a production crop.

Right-of-Way – See Easement

Riparian Area – A geographic area within 25 feet of the high water mark or the top of the bank, including but not limited to streams and watercourses, with or without water during dry season, wetlands, ditches, and ponds.

Refusal – A situation that occurs when a customer / property owner refuses to allow PG&E to perform pre-inspection work or to complete 100% of the work prescribed.

Distribution Vegetation Management Standard (DVMS)

IMPLEMENTATION RESPONSIBILITIES

The Vegetation Management Document Owner is responsible for the rollout and communication of this Standard as well as the periodic review of this document. Vegetation Management Operations is responsible for the distribution of this Standard.

GOVERNING DOCUMENT

[Transmission Vegetation Management Standard](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[General Order 95, Rule 35](#)

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

ANSI/ISO/ASQC Q10011 Guidelines for Auditing Quality Systems

REFERENCE DOCUMENTS

[Database Monitoring Procedure](#)

[Transmission & Distribution Vegetation Hazard Notification Procedure](#)

[Distribution Vegetation Refusal Procedure](#)

[Distribution Routine Patrol Procedure \(DRPP\)](#)

[Mapping Procedure](#)

[Transmission Routine Patrol Procedure \(TRPP\)](#)

Project Management Database (PMD) Standardization Guidelines (Dec. 2015)

APPENDICES

Appendix A: Minimum Distance Requirements (MDR)

ATTACHMENTS

NA

DOCUMENT REVISION

NA



Distribution Vegetation Management Standard (DVMS)

DOCUMENT APPROVER

[REDACTED], Director, Compliance and Risk Management

DOCUMENT OWNER

[REDACTED], Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|-----------------|----------------------------------------------|
| Entire document | New document, formatted to GDM requirements. |

Distribution Vegetation Management Standard (DVMS)

Appendix A: Minimum Distance Requirements (MDR)

| CPUC Rule 35 | Santa Barbara County CPUC Rule 35, Table 1, Case 14 (hh) | PRC 4293 | Potential Line Sag |
|------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------|
| Applicable at all times (1) (feet) | Applicable in extreme and very high fire threat zones in Southern California at all times (1) (feet) | Applicable in SRA during fire season (1) (feet) | (2) (feet) |
| 1.5' | 4' | 4' | 1 - 4' |

- 1) Vegetation shall not encroach within the minimum distance at any time between inspection and one year or next scheduled tree work cycle.
- 2) Depending on span length, facility construction and conductor material, potential sag and sway can range from 1' at quarter-span to 4' at mid-span.

EXHIBIT H-22-1



T&D Vegetation Hazard Notification Procedure

Summary

A hazard notification arises when a vegetation condition affecting transmission or distribution lines which does not pose an imminent threat, but where the condition has the potential to become an imminent threat. This vegetation condition could result from vegetation encroaching in the PG&E Clearance Requirements (Appendix B) or it may arise from outside the ROW due to potential tree or limb failure on non-NERC lines (200kV and below). The purpose of this procedure is to:

1. Provide guidance for notification, communication, root cause analysis, and documentation of trees which qualify for Hazard Notification (HN), for both distribution and transmission systems.
2. Provide direction to PG&E employees and contractors to aid in communicating, coordinating and mitigating the hazard.
3. Ensure compliance of transmission and distribution systems with all applicable laws and regulations.

Level of Use: Informational Use

Target Audience

Vegetation Management Operations

Vegetation Management Planning

Vegetation Management Contractors

- Pre-Inspection (PI)
- Tree Contractor (TC)
- Quality Control (QC)

Safety

PG&E or contract worker must review and follow all applicable safety standards and procedure before performing work, which includes review of tailboards and wearing appropriate Personal Protective Equipment for the job.

Before You Start

Read the Transmission Vegetation Management Standard (TVMS); review the Definitions Section of this document.

All VM employees and contractors must have up-to-date contact lists for Vegetation Management (VM) area personnel.

**T&D Vegetation Hazard Notification Procedure****Table of Contents**

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Procedure Steps**1 Notification Identification**

1.1 When a hazard is found and a Hazard Notification (HN) is issued, the HN is first documented by one of the following methods:

1. Use the handheld device in the field to complete the electronic HN Form.
2. Complete the hard copy HN Form.

1.2 PI or other First Responder must:

1. Provide hazard notifications in a manner that includes confirmation of notification receipt.

NOTE

Leaving a voice mail alone does not meet minimum notification requirements. A verbal or electronic (email or text message) response by the Supervising Vegetation Program Manager / Vegetation Program Manager (SVPMP / VPM) is required.

2. Complete the following:

- IF a hazard notification location (distribution or transmission) is identified by a VM employee or contractor,
THEN contact the appropriate SVPMP / VPM,



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AND provide the following location / situation information:

- Hazard description
- Location information and access
- Field conditions
- IF the location requires immediate action,
 THEN:
 - Coordinate hazard mitigation activities with the SVPN / VPM.
 - Notify the appropriate PI.
 - Remain on site until relieved or until the tree crew arrives.

3. Contact the Database Manager and provide the information necessary to complete a tag record in the Vegetation Management Database (VMD).

- IF the First Responder is a PI on routine patrol using pre-loaded data,
 THEN update the pre-loaded tree record in the handheld device with a “no trim” inventory record for the location.
- IF a record of the tree does not exist in VMD,
 THEN create a tree record in the handheld device with a “no trim” inventory record for the location.

NOTE

The tree will be worked and invoiced on a separate HN work request

4. Enter the prescribed clearance in the VMD tree comments field.
5. Enter ‘HNP’ in the VMD Comments field.

1.3 The SVPN / VPM must:

1. Contact the appropriate parties to direct emergency response needs.
2. Determine the best course of action if immediate response is not required.

1.4 For Hazard Notification on a **NERC** line, the SVPN / VPM must:

1. Notify the SVPN that mitigation has been completed and all VM personnel and contractor employees are clear of the line.



T&D Vegetation Hazard Notification Procedure

2. Notify the Transmission SVP and VM Operations Manager when the action is complete.
 - IF immediate vegetation work is required and the work involves heavy cut-back or a removal in a riparian area,
THEN take the action necessary to do the minimum work needed to achieve compliance,
AND follow the process described in the Corrective Action Procedure.

2 Data Entry, Work Request Generation, and Invoicing

- 2.1 Whether created in the VMD by the Database Manager or downloaded from a handheld device, all records created for HN locations that are also used to generate Work Requests (WR) must use the appropriate priority code that identifies the:
 - Immediate Location
 - Urgent Location

2.2 Immediate Location

1. Upon receiving a call concerning an Immediate / Non-Contact or HN-Immediate Location, the Database Manager must:
 - a. Create a new inspection tag record in the Vegetation Management Database (VMD).
 - b. Enter HNP in the VMD tag number field.
 - c. Create an Immediate / Non-Contact and HN-Immediate WR.
 - d. The Immediate / Non-Contact and HN-Immediate WR must be:
 - (1) Generated separately as a tag:
 - IF HN-Immediate,
THEN use tag type = **Missed Tree** with tag number = **HNP**
 - IF Immediate/Non-Contact,
THEN use tag type = **Storm or Unforeseen** with tag number = **HNP**.
 - (2) Generated separately from existing work as Work Category = **Express**.
 - (3) Generated on the same business day and assigned to the Tree Crew (TC) designated by the VPM



T&D Vegetation Hazard Notification Procedure

2.3 Urgent Location

1. Upon receiving a call concerning a hazard notification location, but the location does not require immediate action, the Database Manager must:
 - a. Enter information into VMD using priority code **HN-Urgent**.
 - b. Generate and issue WR separately from existing work (as tag type = **Missed Tree** with tag number = **HNP** and Work Category = **Express**), unless directed by the SVPM / VPM to do otherwise.
 - c. Verify that no Hazard Notification records are “pending, not issued” or “pending, not complete”.
- IF the Database Manager is unavailable to enter information
 THEN PI must enter information in the handheld device as a separate **HN-Urgent** tag record and transmit the same business day.

3 Invoicing, Documentation – Database Manager, TC, PI, and VPM

3.1 Database Manager must:

1. Deliver hard copy of the WR to the assigned TC by the end of the current work week.
- IF the root cause of the HN is insufficient clearance by the TC or a TC miss,
 THEN close out the WR as non-billable,
 AND notify the SVPM / VPM and TC as soon as possible so the appropriate billing can be monitored,
 AND change the VMD tag type in to **Poor Clear**.
- IF there is an existing WR for the location (i.e. tree missed by TC),
 THEN invoice the original WR with the HN WR as “non-billable”.

NOTE

If appropriate, the SVPM / VPM may elect to invoice on the HN WR with the original WR as non-billable. In either case, the TC and billing office must be given clear direction on how to invoice.

3.2 Enter the information into ITS to document Hazard Notification and close when complete.

4 Hazard Notification Form



T&D Vegetation Hazard Notification Procedure

4.1 The PI must:

1. Complete the top portion and Part I of the Hazard Notification form if filling out soft copy.

4.2 The local Supervising PI must:

1. Complete Part II: Root Cause Analysis of the Hazard Notification Form.

NOTE

For NERC lines only, the system area Sr. VPM will lead the root cause analysis. The Supervising PI must review database records and location history to determine the root cause of the hazard notification location.

2. Forward the completed form to the SVP / VPM **by the end of the next business day** after the HN location is identified.
3. Forward all completed HN forms related to transmission to the SVP and the VM Operations Manager within the next 7 business days.

4.3 The SVP / VPM must:

1. Complete Part III of the HN Form (transmission only)
2. File the completed HN Form in the local office.

5 Incident Review and Follow-up

5.1 The SVP / VPM must:

1. Ensure that all HN locations are reviewed at the next local status meeting.

5.2 For NERC lines, the Transmission SVP must:

1. Coordinate and lead the incident review and follow-up.
2. Discuss status at incident review meetings, including:
 - Root cause analysis
 - Identified root cause analysis trends
 - Action(s) needed to prevent recurrence
 - Timelines for any follow-up actions
- IF the HN is in a riparian area and only minimum clearance was achieved,



T&D Vegetation Hazard Notification Procedure

THEN the SVPMP / VPM must follow up and accelerate the location through the riparian review process.

6 Exceptions

6.1 For non-NERC transmission and distribution lines:

- IF the area Operations Emergency Center(OEC, or "Storm Room") is open due to area storm activity
 AND the contact (wind or failure) can be attributed to the storm activity,
 THEN HN documentation and root cause analyses are not required,
 AND the PI must contact the SVPMP / VPM for direction on calling out TC, creating handheld records, and generating WRs.
- IF a location is a HN non-NERC transmission or a distribution line HN due to the failure of a tree / branch that was overlooked during routine compliance patrol,
 THEN all responsible parties must follow this procedure in its entirety.

6.2 For distribution lines only:

- IF the location is a result of the failure of a live green tree with no visible sign of defect,
 THEN all responsible parties must follow this procedure for hazard notification and work generation,
 AND there is no requirement to complete the HN Form, root cause analysis, or an incident review.
- IF a location is a distribution line HN due to the failure of a tree / branch that was overlooked during routine compliance patrol,
 THEN all responsible parties must follow this procedure in its entirety.

NOTE

If the location is within a riparian or environmentally sensitive area, the VPM must initiate a conference call with the VM Operations Manager and VM Environmental staff to discuss the situation and the work to be performed, as soon as reasonable possible. The purpose of the consultation call is to ensure that the Manager is fully informed on both operational and environmental risk.



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Utility Procedure: Veg-1010P
Publication Date: 06/18/2014 Rev: 1

T&D Vegetation Hazard Notification Procedure

END of Instructions



T&D Vegetation Hazard Notification Procedure

Definitions

Easement (or Right-of-Way) – The corridor of land under a transmission line needed to operate the line. “Easement” refers to the legal description of that corridor.

First Responder – A PG&E employee or contractor in the field, who identifies or responds to a potential imminent threat or Hazard Condition.

Hazard Condition – A vegetation condition affecting transmission or distribution lines which does not pose an imminent threat, but where the condition has the potential to become an imminent threat and is at or encroaching the PG&E clearance distance. In such cases, the Hazard Notification Procedure shall be followed.

- **Non-NERC and Distribution Lines (4kV and 21kV)** – if the tree or a portion of the tree is in contact, shows evidence of contact with the high voltage conductors or poses an immediate threat to the conductors. The contact can result from growth, wind, or failure. See Exceptions section for specifics on handling failure vs. growth on distribution.
- **NERC Lines** – if the tree, any portion of the tree, an uprooted tree, other tree or branch failures, is at or approaching Hazard Notification Reporting distances. The approach to Reporting distances can result from growth, wind, or failure. See Table 1.

Imminent Threat – A vegetation condition affecting NERC transmission lines where it has been identified and confirmed by PG&E personnel and/or contractors that the vegetation condition is likely to cause a fault at any moment. This condition may arise from within or outside the electric transmission right-of-way (ROW), and may be the result of tree growth, potential tree or limb failure, or line movement due to sag or sway. For example:

- A tree that is uprooting and has the potential at any time to fail and fall into the NERC line; or,
- Vegetation growing in proximity to a NERC line that is at or approaching the FAC 003-3 Minimum Vegetation Clearance Distance (MVCD)

Minimum Vegetation Clearance Distance (MVCD) – A calculated minimum distance in feet derived from the Gallet Equations. It is the NERC-adopted method for calculating the flashover (or spark-over) distance used in the design of high voltage electric Transmission lines.

NERC-Regulated Transmission Lines (NERC lines) –



T&D Vegetation Hazard Notification Procedure

Transmission lines operated at 200kV or higher and certain sub-200kV lines that are elements of a Major Western Electric Coordinating Council (WECC) Transfer Path.

Priority Codes – A specific priority code used when a Hazard Notification has been confirmed to exist.

- **Immediate/non-Contact** - Priority code used when it is determined that any growth-related vegetation may encroach within the PG&E Minimum Clearance Requirements or vegetation poses an immediate threat to the conductors.
- **HN-Immediate** – (applies to non-NERC transmission and distribution only) Priority code for any vegetation observed that is in contact with an un-insulated distribution primary conductor. This does not include detached limbs hanging from one conductor.
- **HN-Urgent** – (applies to distribution only) Priority code for any vegetation observed that is not immediate in nature but requires near-term attention.

Right-of-Way (ROW) – The corridor of land under a transmission line(s) needed to operate the line(s).

Riparian Area – A geographic area within 25 feet of the high water mark or the top of the bank, including but not limited to streams/watercourses, with or without water during dry season, wetlands, ditches, and ponds.

Implementation Responsibilities

The Vegetation Management Team is responsible for the implementation, communication and maintenance for this standard and associated procedures.

Governing Document

Transmission Vegetation Management Standard (TVMS)

Compliance Requirement/Regulatory Commitment

North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, FAC-003-03

CPUC General Order (G.O.) 95 Rule 35

California Public Resource Code 4293

California Public Resource Code 4292

Federal Energy Regulatory Commission (FERC) Order No. 777

**T&D Vegetation Hazard Notification Procedure****Reference Documents** Transmission Routine Patrol Procedure

Transmission Orchard Patrol Procedure

Corrective Action Procedure

Imminent Threat Procedure

Transmission Integrated Vegetation Management Procedure

Transmission Right-of-Way Maintenance Procedure

Transmission Vegetation Refusal Procedure

Appendices Appendix A: Hazard Notification Roles & Responsibilities

Appendix B: PG&E Minimum Clearance Requirements

Attachments [Hazard Notification / Imminent Threat Form](#)**Document Rescission** Hazard Notification Imminent Threat Procedure, Version 4, 12/1/09**Approved By** [REDACTED], Manager, Vegetation Management - Operations**Document Owner** [REDACTED], Supervising Vegetation Program Manager Vegetation Management Operations**Document Contact** [REDACTED], Document Author, Vegetation Management, QA Specialist**Revision Notes**

| Where? | What Changed? |
|--------|---------------|
| | |



**Pacific Gas and
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Utility Procedure: Veg-1010P
Publication Date: 06/18/2014 Rev: 1

T&D Vegetation Hazard Notification Procedure



T&D Vegetation Hazard Notification Procedure

APPENDIX A: HAZARD NOTIFICATION ROLES & RESPONSIBILITIES

| | |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Responder: PG&E Contractor (PI), VM Personnel | <ul style="list-style-type: none"> HN transmission - Notify SVPM/VPM as soon as reasonably practical. Identify hazard <ul style="list-style-type: none"> NERC lines: help determine if hazard might be considered an imminent threat. All transmission lines: determine if location and likely mitigation measures raise any environmental concerns per riparian review process. Notify SCUF. When requested, contact TC per SVPM/VPM/SCUF instructions. Contact Database Manager for tag creation. Update/create preload record to inventory trees noting HN and prescribed clearance. Distribution HN - Notify VPM/PI as soon as reasonably practical. Complete Part I – HN Form. Stay on-site until released by SVPM/VPM if requested. |
| Local Area SVPM / VPM | <ul style="list-style-type: none"> Guide appropriate emergency response based on description of situation, site conditions, and tree condition. Incident review. HN transmission – Notify Supervising Transmission Program Manager as soon as reasonably practical. As needed, monitor invoicing and work completion. Maintain long-term paper file at local VM office. |
| PI / Supervising-PI | <ul style="list-style-type: none"> Help identify and confirm hazard. For NERC lines, assist local SVPM/VPM to determine environmental concerns. Implement emergency response per SVPM/VPM. Complete Part II– HN form. Conduct incident review. |
| Database Manager / Supervising-PI | <ul style="list-style-type: none"> Create Missed tree tag. Issue WR with Work Category Express and forward to TC same day for Immediate/Non-Contact and HN-Immediate or by next day for HN-Urgent. Monitor work completion. |
| TC | <ul style="list-style-type: none"> Identify hazard. <ul style="list-style-type: none"> HN NERC line: determine if hazard might be imminent. Determine if location and likely mitigation measures raise environmental concerns. Notify VPM/Forester as soon as practical. Notify SCUF. Contact Database Manager for tag creation. Complete tree work as directed by SVPM/VPM. |
| Supervising Transmission Program Manager | <ul style="list-style-type: none"> Lead incident review and follow-up efforts. |

**T&D Vegetation Hazard Notification Procedure****APPENDIX B: MINIMUM CLEARANCE REQUIREMENTS**

| Voltage | 60/70 | 115 | 230 | 500 |
|------------------------------------|--------------|------------|------------|------------|
| PG&E Minimum Clearance Requirement | 4 ft | 10 ft | 10 ft | 15 ft |

Note: PG&E defined minimum clearance is designed to meet or exceed all applicable regulatory requirements at all times including FAC-003-3.

EXHIBIT H-22-2

T&D Vegetation Hazard Notification Procedure**Attachment 1****Hazard Notification / Imminent Threat Form**

Utility Procedure: Veg-1010P

Publication Date: 6/18/2014 Rev: 1

| | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------|
| Discovery Date | | Time | | Division | |
| Identified By: <input type="checkbox"/> PI <input type="checkbox"/> Tree Crew <input type="checkbox"/> QC <input type="checkbox"/> QA <input type="checkbox"/> Other | | | Circuit or Transmission Line Name (name/voltage): | | |
| Reported By (name) | | | | SSD/Pole Number or Nearest Tower/Structure | |
| Person on site (if different) | | | | For HN Transmission: Distance & Direction to Nearest Tower: | |
| Time VPM/Forester notified | | | | | |
| Tree crew called? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Location/Address | | |
| PI on site while hazard mitigated? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Cross Street | | |
| SCUF notified? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Work Request # (if one already exists, not HN work request) | | |
| HH record completed? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | |
| DMS notified? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Tree Wire? | <input type="checkbox"/> Yes | <input type="checkbox"/> No <input type="checkbox"/> N/A |
| VPM/Forester notified? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Comments | | |

Part I: Field Data Collection

| | | | | | |
|--------------------------------------------------------------------------------------------------|--|---------------------------|--|--------------------------------------------------------------------------------------|--|
| Species | | | | | |
| Height (ft) | | DBH (in) | | Estimated Tree-to-Conductor clearance (ft) | |
| Responsibility Area: <input type="checkbox"/> SRA <input type="checkbox"/> LRA | | | | | |
| Is tree a good candidate for removal? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | Photographs attached? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| If no, why? | | | | If yes, name of file location: | |
| Did you ask property owner for removal? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| If no, why? | | | | | |
| Temperature (F) | | Wind Speed (mph) | | | |
| Tree painted previously? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| Is tree in preload? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | TRANSMISSION ONLY | |
| Previous clearance (ft) | | Prescribed clearance (ft) | | Estimated Conductor-to-Ground clearance (ft) | |
| Is tree located in riparian area? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | Tree location distance (feet) from nearest Tower listed above | |
| Comments | | | | Tree location relative to Conductor (if to the side, distance and direction in feet) | |

T&D Vegetation Hazard Notification Procedure**Attachment 1****Hazard Notification / Imminent Threat Form**Utility Procedure: Veg-1010P
Publication Date: 6/18/2014 Rev: 1**Part II: Root Cause Analysis (for NERC Lines, local VPM takes lead)**

| | | | |
|---------------------------------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of last inspection | | | Reason for non-compliance (check one): |
| Date of last trim | | | <input type="checkbox"/> Missed by TT <input type="checkbox"/> Missed by PI <input type="checkbox"/> Tree not worked <input type="checkbox"/> Incorrect Prescription <input type="checkbox"/> Clearance not achieved <input type="checkbox"/> Other (describe): |
| Is tree a bi-annual (Distribution only)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Was pre-patrol report used? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Has location been accelerated in the past? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Indicate steps taken to prevent recurrence? |
| If yes, did clearance increase? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Refusal location? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Riparian Review location? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| No or restricted Land Rights? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Change routine cycle to bi-annual? <input type="checkbox"/> Yes <input type="checkbox"/> No (Distribution only, requires VPM approval) |
| Transmission Easement Width at HN site (ft) | | | |
| Date mitigated | | | |
| Date reviewed at status meeting | | | |
| HN Work Request # | | | |

HN/IT Transmission only – Part III: Communication Log – Mitigation (VPM/Forester)

| | | | | | |
|------------------------------------------------------|--|-------------------|--|-----------|--|
| Supervising Transmission Program Manager notified by | | | | Date/time | |
| VM Operations Manager notified by | | | | Date/time | |
| Date/time SDV notified | | SDV Operator Name | | Phone # | |
| Describe mitigation actions taken by SDV: | | | | | |

Completion of mitigation work reported to SDV (notification to SDV of line “cleared” of hazard and personnel)

| | | | | | | | | |
|------------------------------------------|--|------|--|-------------------|--|------|---------|------|
| Date | | Time | | SDV Operator Name | | | Phone # | |
| Completed work inspected by VPM/Forester | | | | | | Date | | Time |

EXHIBIT H-22-3



Hazard Notification / Imminent Threat Form

Vegetation Management
Form TD-7103P-09-F01, Rev. 3
Publication Date: 05/07/2019
Effective Date: 05/23/2019

If completing this form by hand, use non-erasable blue or black ink.

| | | | | | |
|------------------------------------|-----|-----------|-------------------------------------------------------------|----------|------------------------------------------------------------------|
| Discovery Date | | Time | | Division | |
| Identified By: | PI | Tree Crew | QC | QA | Circuit or Transmission Line Name (name/voltage): Other _____ |
| Reported By (name) | | | | | SSD/Pole Number or Nearest Tower/Structure |
| Person on site (if different) | | | | | For HN Transmission: Distance & Direction to Nearest Tower: |
| Time VPM/Forester notified | | | | | |
| Tree crew called? | Yes | No | Location/Address | | |
| PI on site while hazard mitigated? | Yes | No | Cross Street | | |
| SCUF notified? | Yes | No | Work Request # (if one already exists, not HN work request) | | |
| HH record completed? | Yes | No | | | |
| DMS notified? | Yes | No | Tree Wire? | Yes | No |
| VPM/Forester notified? | Yes | No | Comments | | |

Part I: Field Data Collection

| | | | | | | |
|------------------------------------------------|--|---------------------------|--|---------------------------------------------------------------|--------------------------------------------------------------------------------------|--|
| Species | | | | | | |
| Height (ft) | | DBH (in) | | Estimated Tree-to-Conductor clearance (ft.) | | |
| Responsibility Area: SRA LRA | | | | | | |
| Is tree a good candidate for removal? Yes No | | | | Photographs attached? Yes No | | |
| If no, why? | | | | If yes, name of file location: | | |
| Did you ask property owner for removal? Yes No | | | | | | |
| If no, why? | | | | | | |
| Temperature (F) | | Wind Speed (mph) | | | | |
| Tree painted previously? Yes No | | | | | | |
| Is tree in preload? Yes No | | | | TRANSMISSION ONLY | | |
| Previous clearance (ft) | | Prescribed clearance (ft) | | Estimated Conductor-to-Ground clearance (ft.) | | |
| Is tree located in riparian area? Yes No | | | | Tree location distance (feet) from nearest Tower listed above | | |
| Comments | | | | | Tree location relative to Conductor (if to the side, distance and direction in feet) | |



Hazard Notification / Imminent Threat Form

Vegetation Management
Form TD-7103P-09-F01, Rev. 3
Publication Date: 05/07/2019
Effective Date: 05/23/2019

If completing this form by hand, use non-erasable blue or black ink.

Part II: Root Cause Analysis (for NERC Lines, local VPM takes lead)

| | | | |
|---------------------------------------------|-----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of last inspection | | | Reason for non-compliance (check one): |
| Date of last trim | | | <input type="checkbox"/> Missed by TT <input type="checkbox"/> Missed by PI <input type="checkbox"/> Tree not worked <input type="checkbox"/> Incorrect Prescription <input type="checkbox"/> Clearance not achieved <input type="checkbox"/> Other (describe): _____ |
| Is tree a bi-annual (Distribution only)? | Yes | No | |
| Was pre-patrol report used? | Yes | No | |
| Has location been accelerated in the past? | Yes | No | Indicate steps taken to prevent recurrence? |
| If yes, did clearance increase? | Yes | No | |
| Refusal location? | Yes | No | |
| Riparian Review location? | Yes | No | |
| No or restricted Land Rights? | Yes | No | Change routine cycle to bi-annual? <input type="checkbox"/> Yes <input type="checkbox"/> No (Distribution only, requires VPM approval) |
| Transmission Easement Width at HN site (ft) | | | |
| Date mitigated | | | |
| Date reviewed at status meeting | | | |
| HN Work Request # | | | |

HN / IT Transmission only – Part III: Communication Log – Mitigation (VPM / Forester)

| | | | | | | |
|------------------------------------------------------|--|-------------------|--|-----------|---------|--|
| Supervising Transmission Program Manager notified by | | | | Date/time | | |
| VM Operations Manager notified by | | | | Date/time | | |
| Date/time SDV notified | | SDV Operator Name | | | Phone # | |
| Describe mitigation actions taken by SDV: | | | | | | |

Completion of mitigation work reported to SDV (notification to SDV of line “cleared” of hazard and personnel)

| | | | | | | | | |
|------------------------------------------|--|------|--|-------------------|--|------|---------|------|
| Date | | Time | | SDV Operator Name | | | Phone # | |
| Completed work inspected by VPM/Forester | | | | | | Date | | Time |



Hazard Notification / Imminent Threat Form

If completing this form by hand, use non-erasable blue or black ink.

Vegetation Management
Form TD-7103P-09-F01, Rev. 3
Publication Date: 05/07/2019
Effective Date: 05/23/2019

REVISION NOTES

| Where? | What Changed? |
|-------------------------------|-----------------------------------------------------------|
| No change to content of form. | Content moved to current Utility Procedure Form template. |

EXHIBIT H-22-4

Vegetation Management Hazard Notification Procedure

SUMMARY

The Hazard Notification Procedure is initiated when a vegetation condition observed in the field affecting overhead electric distribution or transmission facilities requires immediate or urgent mitigation. Vegetation conditions requiring immediate or urgent mitigation may result from either encroachment into the PG&E minimum clearance requirement or from potential tree or limb failure.

NOTE

For NERC lines where vegetation conditions are at or approaching the FAC-003-4 flashover distances (see Appendix A: Table 2) or poses an imminent risk to reliability the imminent threat procedure is initiated (see [Utility Procedure TD-7103P-05, "Transmission Vegetation Management Imminent Threat Procedure"](#)).

The purpose of this procedure is to:

1. Ensure compliance of transmission and distribution systems with all applicable vegetation related laws and regulations (see the ["Compliance Requirement/Regulatory Commitment" Section](#) in this document).
2. Provide direction to aid in notification, communication, documentation, and mitigation of vegetation conditions requiring immediate or urgent action.
3. Provide guidance for meeting or exceeding the requirements of North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management.

Level of Use: Reference Use

TARGET AUDIENCE

Vegetation Management (VM) employees

Vegetation Management contractors

SAFETY

NA

Vegetation Management Hazard Notification Procedure

BEFORE YOU START

1. Review
 - a. [Utility Standard TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)"](#)
 - b. [Utility Procedure TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)
 - c. [Utility Procedure TD-7103P-01, "Transmission Non-Orchard Routine Patrol Procedure \(TRPP\)"](#)
 - d. [Utility Procedure TD-7103P-02, "Transmission Orchard Patrol Procedure \(TOPP\)"](#)
 - e. [Utility Procedure TD-7102P-16, "VM Riparian Review Procedure"](#)
2. Review the [Definitions](#) section of this document.

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Vegetation Management Hazard Notification Procedure

PROCEDURE STEPS

1 Distribution Identification and Initiation of Procedure

- 1.1 The Hazard Notification Procedure is initiated when VM personnel observe a vegetation condition requiring immediate or urgent mitigation in the field. It is important that VM personnel be conservative in the assessment of the hazard and, if unsure, identify the condition as a hazard.
- 1.2 VM personnel must identify the hazard as Immediate or Urgent, as defined in the [Definitions](#) Section of this document.
- 1.3 When an Immediate Hazard Notification (HN-Immediate) is initiated, the following actions must be taken:
 1. The first responder must perform the following steps:

NOTE

A voicemail alone does not meet notification requirement. A verbal or electronic response from the VPM/SVPM is required. Notification must include a description of the vegetation condition, location information, and field conditions.

- a. Notify the vegetation program manager (VPM/SVPM).
- b. Coordinate hazard mitigation activities (pruning or removal of the tree).
- c. Remain on site until relieved or until the tree crew arrives. Relief may be by phone or in person.
- d. Contact the database management specialist (DMS) within 1 business day AND create a record for HN-Immediate work (see Step 2.1.3 below).
- e. Complete [Form TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form."](#)

2. The TC must complete mitigation of the hazard within 24 hours.
3. The senior consulting utility forester (SCUF) must perform the following steps:
 - a. Complete a cause investigation.
 - b. Review at the next status meeting.
4. IF the HN is in a riparian area and only minimum clearance was achieved, THEN the VPM/SVPM must follow up and monitor the location through the riparian review process documented in [TD-7102P-16](#).

Vegetation Management Hazard Notification Procedure

1.4 WHEN an Urgent Hazard Notification (HN-Urgent) is initiated: the following actions must be taken:

1. The first responder must create a record in the hand held device OR call the DMS to have a record created (see Step 1.3.2 below).
2. The DMS must generate and issue HN-Urgent work in compliance with the following timeline requirements:
 - The work must be generated and issued within 3 business days of the hazard being observed.
3. The TC must complete HN-Urgent work in compliance with the following timeline requirements:
 - a. During fire season, the work must be completed within 5 business days of being generated.
 - b. Outside fire season, the work must be completed within 10 business days of being generated.

2 Distribution Data Entry, Work Request (WR) Generation, and Invoicing

2.1 The data entry steps are as follows:

1. When an HN record is created in the Vegetation Management Database (VMD), perform the appropriate step below:
 - a. IF a record of the tree exists in VMD,

THEN update the tree record with a “no trim” inventory record for the location.
 - b. IF a record of the tree does not exist in VMD,

THEN create a tree record with a “no trim” inventory record for the location.
2. Enter ‘HNP’ in the VMD Tag # field.
3. Enter “HN-I” for HN-Immediate or “HN-U” for HN-Urgent and the work prescription in the tree comments field.

2.2 The WR generation steps are as follows:

1. Whether created in the VMD by the DMS or downloaded from a handheld device, all records created for HN locations that are also used to generate WRs must use the appropriate priority code.

Vegetation Management Hazard Notification Procedure

2.2 (continued)

2. When creating an HN-Immediate or HN-Urgent inspection tag record in the VMD, the DMS must perform the following tasks:
 - a. Verify that no HN records are “pending, not issued” or “pending, not complete.”
 - b. Create an HN-Immediate or HN-Urgent WR AND perform the following tasks:
 - (1) Generate the WR separately as a TAG.
 - (2) Use the appropriate tag type.
 - (3) Use tag number = **HNP**.
 - (4) For HN-Immediate only, generate separately from existing work as work category = **Express**.
 - (5) Generate HN-Immediate by the end of the following business day.
 - (6) Generate and issue HN-Urgent work in within 3 business days of observation
 - (7) Assign the work order to the TC designated by the PG&E representative.
3. IF the DMS is unavailable to enter the HN-Immediate information,

THEN the PI must enter information in the handheld device as a separate **HN-Immediate** tag record AND transmit by the end of the next business day.

2.3 The invoicing steps are as follows:

1. The DMS must perform the following steps:
 - a. Deliver either an electronic copy via email or a hard copy of the WR to the assigned TC within 3 business days.
 - b. IF the cause of the HN is insufficient clearance by the TC or a TC miss,

THEN perform the following tasks:

 - (1) Close out the WR as non-billable.
 - (2) Notify the VPM/SVPM and TC as soon as possible so the appropriate billing can be monitored.
 - (3) Change the VMD tag type to **Poor Clear**.

Vegetation Management Hazard Notification Procedure

2.3 (continued)

- c. IF there is an existing WR for the location (i.e., a tree is missed by TC),
THEN invoice the original WR with the HN WR as “non-billable.”

NOTE

If appropriate, the VPM/SVPM may elect to invoice on the HN WR with the original WR as non-billable. In either case, the TC and billing office must be given clear direction on how to invoice.

- d. Enter the information into ITS to document the HN AND close when complete.

3 Distribution Hazard Notification Form

- 3.1 The PI must complete the top portion and Part I of the [Hazard Notification Form](#).
- 3.2 The local supervising PI must perform the following tasks:
 - 1. For HN-Immediate, Complete Part II: Cause Analysis of the [Hazard Notification Form](#).
 - 2. Update ITS records and ensure that ITS records are closed when work is completed.

4 Distribution Incident Review and Follow-up

- 4.1 The VPM/SVPM must perform the following tasks:
 - 1. Ensure that all HN-Immediate locations are reviewed at or before the next status meeting.
 - 2. IF the HN is in a riparian area and only minimum clearance is achieved,
THEN follow up and monitor the location through the riparian review process (see [TD-7102P-16](#)).

5 Distribution Exceptions

- 5.1 When the area Operations Emergency Center (OEC) is open AND the vegetation condition can be attributed to the OEC event, THEN the HN procedure is not initiated.
- 5.2 IF the location is within a riparian or environmentally sensitive area,
THEN the PG&E representative must follow [TD-7102P-16](#).



Vegetation Management Hazard Notification Procedure

6 Transmission Identification

6.1 When a Hazard Notification (HN) is issued, the HN must first be documented by one of the following methods:

1. Use the handheld device in the field to complete the electronic [Form 7103P-09-F01, "Hazard Notification / Imminent Threat Form."](#)
2. Complete the hard copy of [Form TD-7103P-09-F01](#).

6.2 The PI or other first responder must perform the following steps:

1. Provide Hazard Notifications in a manner that includes confirmation of notification receipt.

NOTE

Leaving a voice mail alone does not meet minimum notification requirements. A verbal or electronic (email or text message) response by the supervising vegetation program manager / vegetation program manager (VPM/SVPM) is required.

2. Complete the following steps:

- a. IF a Hazard Notification location is identified by VM personnel or a contractor, THEN perform the following tasks:

(1) CONTACT the appropriate VPM/SVPM/Contract VPM.

(2) Provide the location/situation information as requested by the VPM/SVPM/Contract VPM.

- b. IF the location requires immediate action,

THEN perform the following steps:

(1) Coordinate hazard mitigation activities with the VPM/SVPM/Contract VPM.

(2) Remain on site until relieved, until the tree crew arrives, or until discussed with the VPM and dismissed from the site by PG&E personnel.

NOTE

The tree will be worked and invoiced on a separate HN WR.

3. The PI must complete a tag record in the Vegetation Management Database (VMD).

Vegetation Management Hazard Notification Procedure

6.2 (continued)

4. Enter the prescribed clearance in the VMD tree comments field.
5. Enter HNP in the VMD Comments field.

6.3 The PG&E representative must perform the following tasks:

1. Contact the appropriate parties to direct emergency response needs.
2. Determine the best course of action if an immediate response is not required.

6.4 For Hazard Notification on a NERC line, the VPM/SVPM must make the following notifications:

1. Notify the transmission vegetation manager that mitigation is completed and all PG&E and contract employees are clear of the line.
2. Take the action necessary to achieve compliance.
3. Follow the process described in [Utility Procedure TD-7103P-08, "Transmission Vegetation Corrective Action Procedure."](#)

7 Transmission Data Entry, Work Request (WR) Generation, and Invoicing

7.1 The data entry steps are as follows:

1. When an HN record is created in the Vegetation Management Database (VMD), perform the appropriate step below:
 - a. IF record of the tree exists in VMD,
THEN update the tree record with a "no trim" inventory record for the location.
 - b. IF a record of the tree does not exist in VMD,
THEN create a tree record with a "no trim" inventory record for the location.
2. Enter 'HNP' in the VMD Tag # field.
3. Enter "HN-I" for HN-Immediate or "HN-U" for HN-Urgent and the prescription in the tree comments field.

7.2 The WR generation steps are as follows:

1. Whether created in the VMD by the DMS or downloaded from a handheld device, all records created for HN locations that are also used to generate WRs must use the appropriate priority code.

Vegetation Management Hazard Notification Procedure

7.2 (continued)

2. When creating an HN tag record in the VMD, the DMS must perform the following tasks:
 - a. Create an HN-Immediate or HN-Urgent WR AND
 - (1) Generate it separately as a **TAG**.
 - (2) Use the appropriate tag type.
 - (3) Use tag number = **HNP**.
 - (4) Generate separately from existing work as work category = **Express**.
 - (5) Generate it by the end of the following business day.
 - (6) Assign it to the Tree Crew (TC) designated by the PG&E representative.

7.3 The invoicing steps are as follows:

1. The DMS must perform the following steps:
 - a. Deliver either an electronic copy via email or a hard copy of the WR to the assigned TC within 3 business days.
 - b. IF the cause of the HN is insufficient clearance by the TC or a TC miss, THEN perform the following steps:
 - (1) Close out the WR as non-billable.
 - (2) Notify the VPM/SVPM and TC as soon as possible so the appropriate billing can be monitored,
 - (3) Change the VMD tag type to the appropriate tag type.

NOTE

If appropriate, the VPM/SVPM may elect to invoice on the HN WR with the original WR as non-billable. In either case, the TC and billing office must be given clear direction on how to invoice.

- c. Enter the information into ITS to document the Hazard Notification AND close when complete.

Vegetation Management Hazard Notification Procedure

8 Transmission Hazard Notification Form

- 8.1 The PI must complete the top portion and Part I of the [Hazard Notification Form](#).
- 8.2 The local supervising PI must perform the following steps:
 1. Complete Part II: Cause Analysis of the [Hazard Notification Form](#).
 2. Determine the cause as follows:
 - a. For NERC lines only, the VPM/SVPM must lead the cause analysis.
 - b. The supervising PI must review database records and location history to determine the cause of the HN location.
 3. Forward all completed NERC [Hazard Notification Forms](#) related to transmission to the SVPM and the VM transmission manager by the end of the next business day.
 4. Forward all completed Non-ERC [Hazard Notification Forms](#) related to transmission to the SVPM within the next 7 business days.
- 8.3 The VPM/SVPM must perform the following tasks:
 1. Complete Part III of the [Hazard Notification Form](#) (transmission NERC Imminent Threat only).
 2. File the completed [Hazard Notification Form](#) in the local office or electronically.

9 Transmission Incident Review and Follow-up

- 9.1 The VPM/SVPM must review HN locations with the PI and TC.
- 9.2 For NERC lines, the transmission VPM/SVPM must perform the following tasks:
 1. Coordinate and lead the incident review and follow-up.
 2. Discuss status at incident review meetings, including meetings covering the following topics:
 - Cause analysis
 - Identified cause analysis trends
 - Action(s) needed to prevent recurrence
 - Timelines for any follow-up actions
 3. IF the HN is in a riparian area and only minimum clearance is achieved,
THEN the VPM/SVPM must follow up and accelerate the location through the riparian review process (see [TD-7102P-16](#)).

Vegetation Management Hazard Notification Procedure

10 Transmission Exceptions

10.1 If the location is within a riparian or environmentally sensitive area,
THEN the PG&E representative must follow [TD-7102P-16](#).

END of Instructions

DEFINITIONS

Easement (or Right-of-Way): The corridor of land under or along an electric line needed to operate the line. "Easement" refers to the legal description of that corridor.

First Responder: A PG&E employee or contractor in the field, who identifies or responds to a Hazard Notification vegetation condition, typically a Pre-Inspector.

HFTD: High fire threat district.

HN-Immediate: Priority code used when any of the following vegetation conditions are observed in the field.

Transmission:

- At or approaching encroachment within the PG&E minimum clearance requirements or poses an immediate threat to the conductors.

Distribution:

- In contact or showing signs of previous contact with a distribution primary conductor
- Actively failing or at immediate risk of failing and could strike the facilities
- Presents an immediate risk to electric overhead facilities

HN-Urgent: Transmission (Non-NERC only) and distribution:

- Priority code used when it is determined that vegetation has encroached within the PG&E Minimum Clearance Requirements
- Priority code for any vegetation observed that is not immediate in nature but requires near-term mitigation

Imminent Threat: A vegetation condition affecting NERC transmission lines where it has been identified and confirmed by PG&E personnel and/or contractors that the vegetation condition is likely to cause a fault at any moment. This condition may arise from within or outside the electric transmission right-of-way (ROW), and may be the result of tree growth, potential tree or limb failure, or line movement due to sag or sway. The following are examples:

Vegetation Management Hazard Notification Procedure

- A tree that is uprooting and has the potential at any time to fail and fall into the NERC line.
- Vegetation growing in proximity to a NERC line that is at or approaching the FAC 003-4 Minimum Vegetation Clearance Distance (MVCD).

Minimum Clearance Requirement (MCR) (may also be referred to as Minimum Distance Requirement (MDR)): Minimum clearance distance required by PG&E for distribution and transmission lines. See [Appendix B, Table 1](#).

Minimum Vegetation Clearance Distance (MVCD): Minimum vegetation clearance distance required to prevent flash-over. However, prudent vegetation practices dictate that substantially greater distances will be achieved at time of vegetation maintenance. See [Appendix B, Table 2](#).

NERC-Regulated Transmission Lines (NERC lines): Transmission lines operated at 200kV or higher and certain sub-200kV lines that are elements of a Major Western Electric Coordinating Council (WECC) Transfer Path.

PG&E Representative: Vegetation Program Manager, Supervising Vegetation Program Manager, or his/her authorized representative(s).

PG&E VM personnel: PG&E VM employees and VM contractors.

Pre-Inspection contractor (PI): The individual responsible for ground patrol of the facilities.

Prescription: The work prescribed to mitigate the vegetation condition. This could be removal or pruning.

Riparian Area: The area within 25 feet horizontal distance of the OHWM (or the top of the bank if the OHWM is not easily identified) of streams, rivers, flood plains, lakes, estuaries, marshes, tidelands, lagoons, wetlands, including ephemeral, seasonal, and perennial waters. It also includes ditches which are part of a natural or re-routed stream, irrigation or drainage ditches with riparian vegetation and unobstructed connection to a natural watercourse, and ponds which can support native fish or amphibians.

Tree Contractor (TC): The individual or crew responsible for completing the vegetation work. Typically, the routine tree contractor.

Vegetation Management Hazard Notification Procedure

IMPLEMENTATION RESPONSIBILITIES

The vegetation management transmission team is responsible for the implementation, communication, and maintenance of this procedure and associated standard.

- The VM manager communicates this procedure to the VM stakeholders.
- The VM supervisor communicates this procedure to the operational work teams.

GOVERNING DOCUMENT

[TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)"](#)

[Utility Procedure TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

California Public Resource Code 4292

California Public Resource Code 4293

[CPUC General Order \(G.O.\) 95 Rule 35](#)

Federal Energy Regulatory Commission (FERC) Order No. 777

North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, [NERC FAC-003-4 Transmission Vegetation Management](#)

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[Utility Procedure TD-7102P-16, "VM Riparian Review Procedure"](#)

[Utility Procedure TD-7103P-08, "Transmission Vegetation Corrective Action Procedure"](#)

APPENDICES

[Appendix A, Hazard Notification Roles and Responsibilities](#)

[Appendix B, Minimum Clearance Requirements](#)



Vegetation Management Hazard Notification Procedure

ATTACHMENTS

[TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#)

DOCUMENT REVISION

TD-7103P-09, "T&D Vegetation Hazard Notification Procedure," dated 10/01/2016,
Rev. 2

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Senior Vegetation Program Manager, Vegetation Management

REVISION NOTES

| Where? | What Changed? |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Summary | Clarified the scope. |
| Procedure Steps | Separated, edited, and updated previously combined instructions for VM Distribution hazard notification (HN) and Transmission HN. |
| Definitions section | Clarified definitions. |
| Appendix B | Added minimum clearance requirements for 4-21 kV LRA and 4-21 kV for HFTD and SRA to Table 1, "PG&E Clearance Requirements." |

Vegetation Management Hazard Notification Procedure

Appendix A, Hazard Notification Roles and Responsibilities

Page 1 of 1

| | |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Responder: PG&E Contractor (PI), VM Personnel | <ul style="list-style-type: none"> HN transmission - Notify VPM/SVPM as soon as reasonably practical. Identify hazard <ul style="list-style-type: none"> NERC lines: help determine if hazard might be considered an imminent threat. All transmission lines: determine if location and likely mitigation measures raise any environmental concerns per riparian review process. Distribution HN-Immediate - Notify VPM/SVPM as soon as reasonably practical. Notify SCUF. When requested, contact TC per VPM/SVPM/SCUF instructions. Contact DMS for tag creation. Update/create preload record to inventory trees noting HN and prescribed clearance. Complete Part I – HN Form. Stay on-site until released by VPM/SVPM. |
| Local Area VPM/SVPM | <ul style="list-style-type: none"> Guide appropriate emergency response based on description of situation, site conditions, and tree condition. Incident review. HN transmission – Notify Supervising Transmission Program Manager as soon as reasonably practical. As needed, monitor invoicing and work completion. |
| PI / Supervising-PI | <ul style="list-style-type: none"> Help identify and confirm hazard. For NERC lines, assist local VPM/SVPM to determine environmental concerns. Complete Part II– HN form. Conduct incident review. |
| Database Manager / Supervising-PI | <ul style="list-style-type: none"> Create Missed tree tag. Issue WR with Work Category Express and forward to TC by the end of the following business day for HN-Immediate or within 3 days for HN-Urgent. Monitor work completion. |
| TC | <ul style="list-style-type: none"> Follow VM BMP's. HN NERC line: determine if hazard might be imminent; if so follow Imminent Threat Procedure, TD 7103P-05. Safely complete tree work. Complete and submit WRs in a timely manner. |
| Supervising Transmission Program Manager | <ul style="list-style-type: none"> Lead incident review and follow-up efforts. |

Vegetation Management Hazard Notification Procedure

Appendix B, Minimum Clearance Requirements

Page 1 of 1

Table 1. PG&E Clearance Requirements

| Voltage | 4-21kV LRA | 4-21kV HFTD/SRA | 60/70 kV | 115 kV | 230 kV | 500 kV |
|---------------------------------------------|---------------|--------------------|----------|--------|--------|--------|
| PG&E Minimum Clearance Requirement | 18 in. | 4 ft. | 4 ft. | 10 ft. | 10 ft. | 15 ft. |

Note: PG&E-defined minimum clearance is designed to meet or exceed all applicable regulatory requirements at all times, including FAC-003-4.

Table 2. NERC Minimum Vegetation Clearance Distance (MVCD) in Feet

| NERC Minimum Vegetation Clearance Distance (MVCD) in Feet | | | | |
|--------------------------------------------------------------|----------|--------|--------|--------|
| Elevation (feet) | 60/70 kV | 115 kV | 230 kV | 500 kV |
| 0 - 500 | 1.1 | 1.9 | 4 | 7 |
| 501 - 1000 | 1.1 | 1.9 | 4.1 | 7.1 |
| 1001 - 2000 | 1.1 | 1.9 | 4.2 | 7.2 |
| 2001 - 3000 | 1.2 | 2 | 4.3 | 7.4 |
| 3001 - 4000 | 1.2 | 2 | 4.3 | 7.5 |
| 4001 - 5000 | 1.2 | 2.1 | 4.4 | 7.6 |
| 5001 - 6000 | 1.2 | 2.1 | 4.5 | 7.8 |
| 6001 - 7000 | 1.3 | 2.2 | 4.6 | 7.9 |
| 7001 - 8000 | 1.3 | 2.2 | 4.7 | 8.1 |
| 8001 - 9000 | 1.3 | 2.3 | 4.8 | 8.2 |
| 9001 - 10000 | 1.4 | 2.3 | 4.9 | 8.3 |
| 10001 - 11000 | 1.4 | 2.4 | 5 | 8.5 |
| 11001 - 12000 | 1.4 | 2.5 | 5.1 | 8.6 |
| 12001 - 13000 | 1.5 | 2.5 | 5.2 | 8.8 |
| 13001 - 14000 | 1.6 | 2.6 | 5.3 | 8.9 |
| 14001 - 15000 | 1.6 | 2.7 | 5.4 | 9.1 |

Note: The maximum tree heights described in this document must always meet (or exceed) the NERC MVCD requirements described in this table.

EXHIBIT H-22-5

Vegetation Management Hazard Notification Procedure

SUMMARY

The Hazard Notification Procedure is initiated when a vegetation condition observed in the field affecting overhead electric distribution or transmission facilities requires immediate or urgent mitigation. Vegetation conditions requiring immediate or urgent mitigation may result from either encroachment into the PG&E minimum clearance requirement or from potential tree or limb failure.

NOTE

For NERC lines where vegetation conditions are at or approaching the FAC-003-4 flashover distances (see Appendix A: Table 2) or poses an imminent risk to reliability the imminent threat procedure is initiated (see [Utility Procedure TD-7103P-05, "Transmission Vegetation Management Imminent Threat Procedure"](#)).

The purpose of this procedure is to:

1. Ensure compliance of transmission and distribution systems with all applicable vegetation related laws and regulations (see the ["Compliance Requirement/Regulatory Commitment" Section](#) in this document).
2. Provide direction to aid in notification, communication, documentation, and mitigation of vegetation conditions requiring immediate or urgent action.
3. Provide guidance for meeting or exceeding the requirements of North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management.

Level of Use: Reference Use

TARGET AUDIENCE

Vegetation Management (VM) employees

Vegetation Management contractors

SAFETY

NA

Vegetation Management Hazard Notification Procedure

BEFORE YOU START

1. Review
 - a. [Utility Standard TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)"](#)
 - b. [Utility Procedure TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)
 - c. [Utility Procedure TD-7103P-01, "Transmission Non-Orchard Routine Patrol Procedure \(TRPP\)"](#)
 - d. [Utility Procedure TD-7103P-02, "Transmission Orchard Patrol Procedure \(TOPP\)"](#)
 - e. [Utility Procedure TD-7102P-16, "VM Riparian Review Procedure"](#)
2. Review the [Definitions](#) section of this document.

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Vegetation Management Hazard Notification Procedure

PROCEDURE STEPS

1 Distribution Identification and Initiation of Procedure

- 1.1 The Hazard Notification Procedure is initiated when VM personnel OBSERVE a vegetation condition requiring immediate or urgent mitigation in the field. It is important that VM personnel be conservative in the assessment of the hazard and, if unsure, IDENTIFY the condition as a hazard.
- 1.2 VM personnel must IDENTIFY the hazard as Immediate or Urgent, as defined in the [Definitions](#) Section of this document.
- 1.3 When an Immediate **Hazard Notification (HN-Immediate)** IS INITIATED, the following actions must be TAKEN:
 1. The first responder must PERFORM the following steps:

NOTE

A voicemail alone does not meet notification requirement. A verbal or electronic response from the VPM/SVPM is required. Notification must include a description of the vegetation condition, location information, and field conditions.

- a. NOTIFY the vegetation program manager (VPM/SVPM).
- b. COORDINATE hazard mitigation activities (pruning or removal of the tree).
- c. REMAIN on site until relieved or until the tree crew arrives. Relief may be by phone or in person.
- d. CREATE a vegetation point within Tree Tracker system with all required information.
- e. COMPLETE the top portion and Part I of the [TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#) in Tree Tracker system via mobile device.
- f. CONTACT the database management specialist (DMS) within 1 business day.

2. The TC must COMPLETE mitigation of the hazard within 24 hours.
 - a. The TC must MARK hazard work complete within Tree Tracker system.
3. The senior consulting utility forester (SCUF) must PERFORM the following steps:
 - a. COMPLETE Part II of the [TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#) in Tree Tracker system via mobile device to document the cause investigation.
 - b. REVIEW at the next status meeting.

Vegetation Management Hazard Notification Procedure

1.3 (continued)

4. IF the HN is in a riparian area and only minimum clearance IS ACHIEVED, THEN the VPM/SVPM must FOLLOW UP AND MONITOR the location through the riparian review process documented in [TD-7102P-16](#).

1.4 WHEN an **Urgent Hazard Notification (HN-Urgent)** IS INITIATED, the following actions must BE TAKEN:

1. The first responder must COMPLETE the top portion and Part I of the [TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#) AND CREATE a vegetation point in Tree Tracker system via mobile device.
2. The DMS must GENERATE AND ISSUE HN-Urgent work in compliance with the following timeline requirements:
 - The work must BE GENERATED AND ISSUED within 3 business days of the hazard BEING OBSERVED.
3. The TC must COMPLETE HN-Urgent work in compliance with the following timeline requirements:
 - a. During fire season, the work must BE COMPLETED within 5 business days of BEING GENERATED.
 - b. Outside fire season, the work must BE COMPLETED within 10 business days of BEING GENERATED.
4. The senior consulting utility forester (SCUF) must PERFORM the following steps:
 - a. COMPLETE Part II of the [TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#) in Tree Tracker system via mobile device to document the cause investigation.
 - b. REVIEW at the next status meeting.

2 Distribution Invoicing

2.1 The invoicing steps are as follows:

1. The DMS must PERFORM the following steps:
 - a. CONTACT the assigned tree company to CONFIRM receipt of the work request (WR).

Vegetation Management Hazard Notification Procedure

2.1 (continued)

- b. IF the cause of the HN is insufficient clearance by the TC or a TC miss,
THEN PERFORM the following tasks:
 - (1) CLOSE out the WR as non-billable.
 - (2) NOTIFY the VPM/SVPM and TC as soon as possible so the appropriate billing can be monitored.
 - (3) CHANGE the tag type to **Poor Clear**.
- c. IF there is an existing WR for the location (i.e., a tree is missed by TC),
THEN INVOICE the original WR with the HN WR as "non-billable."

NOTE

If appropriate, the VPM/SVPM may ELECT to INVOICE on the HN WR with the original WR as non-billable. In either case, the TC AND billing office must BE GIVEN clear direction on how to `.

- d. ENTER the information into Tree Tracker system AND CLOSE when complete.

3 Distribution Incident Review and Follow-up

3.1 The VPM/SVPM must PERFORM the following tasks:

- 1. ENSURE that all HN-Immediate locations ARE REVIEWED at or before the next status meeting.
- 2. IF the HN is in a riparian area and only minimum clearance IS ACHIEVED,
THEN FOLLOW UP AND MONITOR the location through the riparian review process (see [TD-7102P-16](#)).

4 Distribution Exceptions

- 4.1 When the area Operations Emergency Center (OEC) is open AND the vegetation condition CAN BE ATTRIBUTED to the OEC event, THEN the HN procedure IS NOT INITIATED.
- 4.2 IF the location is within a riparian or environmentally sensitive area,
THEN the PG&E representative must FOLLOW [TD-7102P-16](#).



Vegetation Management Hazard Notification Procedure

5 Transmission Identification

5.1 When a Hazard Notification (HN) is ISSUED, the HN must first BE DOCUMENTED by one of the following methods:

1. USE the handheld device in the field to COMPLETE the electronic [Form 7103P-09-F01, "Hazard Notification / Imminent Threat Form."](#)
2. COMPLETE the hard copy of [Form TD-7103P-09-F01](#).

5.2 The PI or other first responder must PERFORM the following steps:

1. PROVIDE Hazard Notifications in a manner that includes confirmation of notification receipt.

NOTE

LEAVING a voice mail alone does not meet minimum notification requirements. A verbal or electronic (email or text message) response by the supervising vegetation program manager / vegetation program manager (VPM/SVPM) IS REQUIRED.

2. COMPLETE the following steps:

- a. IF a Hazard Notification location is IDENTIFIED by VM personnel OR a contractor,

THEN PERFORM the following tasks:

- (1) CONTACT the appropriate VPM/SVPM/Contract VPM.
- (2) PROVIDE the location/situation information as requested by the VPM/SVPM/Contract VPM.

- b. IF the location REQUIRES immediate action,

THEN PERFORM the following steps:

- (1) Coordinate hazard mitigation activities with the VPM/SVPM/Contract VPM.
- (2) REMAIN on site until relieved, until the tree crew arrives, or until discussed with the VPM and dismissed from the site by PG&E personnel.

NOTE

The tree will be WORKED AND INVOICED on a separate HN WR.

3. The PI must COMPLETE a tag record in the Vegetation Management Database (VMD).

Vegetation Management Hazard Notification Procedure

4. ENTER the prescribed clearance in the VMD tree comments field.
5. ENTER HNP in the VMD comments field.

5.3 The PG&E representative must PERFORM the following tasks:

1. CONTACT the appropriate parties to DIRECT emergency response needs.
2. DETERMINE the best course of action if an immediate response IS NOT REQUIRED.

5.4 For Hazard Notification on a NERC line, the VPM/SVPM must MAKE the following notifications:

1. NOTIFY the transmission vegetation manager that mitigation is completed AND all PG&E and contract employees are clear of the line.
2. TAKE the action necessary TO ACHIEVE compliance.
3. FOLLOW the process described in [Utility Procedure TD-7103P-08, "Transmission Vegetation Corrective Action Procedure."](#)

6 Transmission Data Entry, Work Request (WR) Generation, and Invoicing

6.1 The data entry steps are as follows:

1. When an HN record IS CREATED in the Vegetation Management Database (VMD), PERFORM the appropriate step below:
 - a. IF a record of the tree EXISTS in VMD,
THEN UPDATE the tree record with a "no trim" inventory record for the location.
 - b. IF a record of the tree DOES NOT EXIST in VMD,
THEN CREATE a tree record with a "no trim" inventory record for the location.
2. ENTER **HNP** in the **VMD Tag #** field.
3. ENTER **HN-I** for HN-Immediate or **HN-U** for HN-Urgent AND the prescription in the tree comments field.

6.2 The WR generation steps are as follows:

1. Whether CREATED in the VMD by the DMS or DOWNLOADED from a handheld device, all records CREATED for HN locations that are also USED TO GENERATE WRs must USE the appropriate priority code.

Vegetation Management Hazard Notification Procedure

6.2 (continued)

2. When CREATING an HN tag record in the VMD, the DMS must PERFORM the following tasks:
 - a. CREATE an HN-Immediate or HN-Urgent WR AND
 - (1) GENERATE it separately as a **TAG**.
 - (2) USE the appropriate tag type.
 - (3) USE tag number = **HNP**.
 - (4) GENERATE separately from existing work as work category = **Express**.

6.2 (continued)

- (5) GENERATE it by the end of the following business day.
- (6) ASSIGN it to the Tree Crew (TC) DESIGNATED by the PG&E representative.

6.3 The invoicing steps are as follows:

1. The DMS must PERFORM the following steps:
 - a. DELIVER either an electronic copy via email OR a hard copy of the WR to the assigned TC within 3 business days.
 - b. IF the cause of the HN is insufficient clearance by the TC or a TC miss, THEN PERFORM the following steps:
 - (1) CLOSE out the WR as non-billable.
 - (2) NOTIFY the VPM/SVPM and TC as soon as possible so the appropriate billing can be monitored.
 - (3) CHANGE the VMD tag type to the appropriate tag type.

NOTE

If appropriate, the VPM/SVPM MAY ELECT TO INVOICE on the HN WR with the original WR as non-billable. In either case, the TC AND billing office must BE GIVEN clear direction on how to invoice.

- c. ENTER the information into ITS to DOCUMENT the Hazard Notification AND CLOSE when complete.

Vegetation Management Hazard Notification Procedure

7 Transmission Hazard Notification Form

- 7.1 The PI must COMPLETE the top portion AND Part I of the [Hazard Notification Form](#).
- 7.2 The local supervising PI must PERFORM the following steps:
 1. COMPLETE Part II: Cause Analysis of the [Hazard Notification Form](#).
 2. DETERMINE the cause as follows:
 - a. For NERC lines only, the VPM/SVPM must LEAD the cause analysis.
 - b. The supervising PI must REVIEW database records AND location history to DETERMINE the cause of the HN location.
 3. FORWARD all completed NERC [Hazard Notification Forms](#) related to transmission to the SVPM and the VM transmission manager by the end of the next business day.
 4. FORWARD all completed Non-ERC [Hazard Notification Forms](#) related to transmission to the SVPM within the next 7 business days.
- 7.3 The VPM/SVPM must PERFORM the following tasks:
 1. COMPLETE Part III of the [Hazard Notification Form](#) (transmission NERC Imminent Threat only).
 2. FILE the completed [Hazard Notification Form](#) in the local office or electronically.

8 Transmission Incident Review and Follow-up

- 8.1 The VPM/SVPM must REVIEW HN locations with the PI and TC.
- 8.2 For NERC lines, the transmission VPM/SVPM must PERFORM the following tasks:
 1. COORDINATE AND LEAD the incident review and follow-up.
 2. DISCUSS status at incident review meetings, including meetings covering the following topics:
 - Cause analysis
 - Identified cause analysis trends
 - Action(s) needed to prevent recurrence
 - Timelines for any follow-up actions
 3. IF the HN is in a riparian area and only minimum clearance IS ACHIEVED, THEN the VPM/SVPM must FOLLOW UP AND ACCELERATE the location through the riparian review process (see [TD-7102P-16](#)).



Vegetation Management Hazard Notification Procedure

9 Transmission Exceptions

9.1 IF the location is within a riparian or environmentally sensitive area,
THEN the PG&E representative must follow [TD-7102P-16](#).

END of Instructions

Vegetation Management Hazard Notification Procedure

DEFINITIONS

Easement (or Right-of-Way): The corridor of land under or along an electric line needed to operate the line. "Easement" refers to the legal description of that corridor.

First Responder: A PG&E employee or contractor in the field who identifies or responds to a Hazard Notification vegetation condition, typically a Pre-Inspector.

HFTD: High fire threat district.

HN-Immediate: Priority code used when any of the following vegetation conditions are observed in the field.

Transmission:

- At or approaching encroachment within the PG&E minimum clearance requirements or poses an immediate threat to the conductors.

Distribution:

- In contact or showing signs of previous contact with a distribution primary conductor.
- Actively failing or at immediate risk of failing and could strike the facilities.
- Presents an immediate risk to electric overhead facilities.

HN-Urgent: Transmission (Non-NERC only) and distribution:

- Priority code used when it is determined that vegetation has encroached within the PG&E Minimum Clearance Requirements.
- Priority code for any vegetation observed that is not immediate in nature but requires near-term mitigation.

Imminent Threat: A vegetation condition affecting NERC transmission lines where it has been identified and confirmed by PG&E personnel and/or contractors that the vegetation condition is likely to cause a fault at any moment. This condition may arise from within or outside the electric transmission right-of-way (ROW), and may be the result of tree growth, potential tree or limb failure, or line movement due to sag or sway. The following are examples:

- A tree that is uprooting and has the potential at any time to fail and fall into the NERC line.
- Vegetation growing in proximity to a NERC line that is at or approaching the FAC 003-4 Minimum Vegetation Clearance Distance (MVCD).

Vegetation Management Hazard Notification Procedure

Minimum Clearance Requirement (MCR) (may also be referred to as Minimum Distance Requirement (MDR)): Minimum clearance distance required by PG&E for distribution and transmission lines. See [Appendix B, Table 1](#).

Minimum Vegetation Clearance Distance (MVCD): Minimum vegetation clearance distance required to prevent flash-over. However, prudent vegetation practices dictate that substantially greater distances will be achieved at time of vegetation maintenance. See [Appendix B, Table 2](#).

NERC-Regulated Transmission Lines (NERC lines): Transmission lines operated at 200 kV or higher and certain sub-200 kV lines that are elements of a Major Western Electric Coordinating Council (WECC) Transfer Path.

PG&E Representative: Vegetation Program Manager, Supervising Vegetation Program Manager, or his/her authorized representative(s).

PG&E VM personnel: PG&E VM employees and VM contractors.

Pre-Inspection contractor (PI): The individual responsible for ground patrol of the facilities.

Prescription: The work prescribed to mitigate the vegetation condition. This could be removal or pruning.

Riparian Area: The area within 25 feet horizontal distance of the OHWM (or the top of the bank if the OHWM is not easily identified) of streams, rivers, flood plains, lakes, estuaries, marshes, tidelands, lagoons, wetlands, including ephemeral, seasonal, and perennial waters. It also includes ditches which are part of a natural or re-routed stream, irrigation or drainage ditches with riparian vegetation and unobstructed connection to a natural watercourse, and ponds which can support native fish or amphibians.

Tree Contractor (TC): The individual or crew responsible for completing the vegetation work. Typically, the routine tree contractor.

IMPLEMENTATION RESPONSIBILITIES

The vegetation management transmission team is responsible for the implementation, communication, and maintenance of this procedure and associated standard.

- The VM manager communicates this procedure to the VM stakeholders.
- The VM supervisor communicates this procedure to the operational work teams.



Vegetation Management Hazard Notification Procedure

GOVERNING DOCUMENT

[TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)"](#)

[Utility Procedure TD-7102P-01, "Distribution Routine Patrol Procedure \(DRPP\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

California Public Resource Code 4292

California Public Resource Code 4293

[CPUC General Order \(G.O.\) 95 Rule 35](#)

Federal Energy Regulatory Commission (FERC) Order No. 777

North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, [NERC FAC-003-4 Transmission Vegetation Management](#)

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[Utility Procedure TD-7102P-16, "VM Riparian Review Procedure"](#)

[Utility Procedure TD-7103P-08, "Transmission Vegetation Corrective Action Procedure"](#)

APPENDICES

[Appendix A, Hazard Notification Roles and Responsibilities](#)

[Appendix B, Minimum Clearance Requirements](#)

ATTACHMENTS

[TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#)

DOCUMENT REVISION

TD-7103P-09, "T&D Vegetation Hazard Notification Procedure," dated 05/07/2019, Rev. 3

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management Operations



Vegetation Management Hazard Notification Procedure

DOCUMENT OWNER

[REDACTED], Senior Manager, Vegetation Management Operations

DOCUMENT CONTACT

[REDACTED], Program Manager, Vegetation Management Operations

REVISION NOTES

| Where? | What Changed? |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Title | Removed "T&D." |
| Summary | Clarified the scope. |
| Procedure Steps | Separated, edited, and updated previously combined instructions for VM Distribution hazard notification (HN) and Transmission HN. |
| Definitions section | Clarified definitions. |
| Appendix B | Added minimum clearance requirements for 4-21 kV LRA and 4-21 kV for HFTD and SRA to Table 1, "PG&E Clearance Requirements." |
| Distribution Sections | Updated instruction for the use of Tree Tracker system instead of VMD system. |
| Step 1.3 | Clarified which specific sections of TD-7103P-09-F01 each role completes. First responder completes top portion and Part I, SCUF fills out Part II. |

Vegetation Management Hazard Notification Procedure

Appendix A, Hazard Notification Roles and Responsibilities

Page 1 of 1

| | |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Responder: PG&E Contractor (PI), VM Personnel | <ul style="list-style-type: none"> HN transmission - Notify VPM/SVPM as soon as reasonably practical. Identify hazard <ul style="list-style-type: none"> NERC lines: help determine if hazard might be considered an imminent threat. All transmission lines: determine if location and likely mitigation measures raise any environmental concerns per riparian review process. Distribution HN-Immediate - Notify VPM/SVPM as soon as reasonably practical. Notify SCUF. When requested, contact TC per VPM/SVPM/SCUF instructions. Contact DMS for tag creation. Update/create preload record to inventory trees noting HN and prescribed clearance. Complete Part I – HN Form. Stay on-site until released by VPM/SVPM. |
| Local Area VPM/SVPM | <ul style="list-style-type: none"> Guide appropriate emergency response based on description of situation, site conditions, and tree condition. Incident review. HN transmission – Notify Supervising Transmission Program Manager as soon as reasonably practical. As needed, monitor invoicing and work completion. |
| PI / Supervising-PI | <ul style="list-style-type: none"> Help identify and confirm hazard. For NERC lines, assist local VPM/SVPM to determine environmental concerns. Complete Part II– HN form. Conduct incident review. |
| Database Manager / Supervising-PI | <ul style="list-style-type: none"> Create Missed tree tag. Issue WR with Work Category Express and forward to TC by the end of the following business day for HN-Immediate or within 3 days for HN-Urgent. Monitor work completion. |
| TC | <ul style="list-style-type: none"> Follow VM BMP's. HN NERC line: determine if hazard might be imminent; if so follow Imminent Threat Procedure, TD 7103P-05. Safely complete tree work. Complete and submit WRs in a timely manner. |
| Supervising Transmission Program Manager | <ul style="list-style-type: none"> Lead incident review and follow-up efforts. |

Vegetation Management Hazard Notification Procedure

Appendix B, Minimum Clearance Requirements

Page 1 of 1

Table 1. PG&E Clearance Requirements

| Voltage | 4-21kV LRA | 4-21kV HFTD/SRA | 60/70 kV | 115 kV | 230 kV | 500 kV |
|---------------------------------------------|---------------|--------------------|----------|--------|--------|--------|
| PG&E Minimum Clearance Requirement | 18 in. | 4 ft. | 4 ft. | 10 ft. | 10 ft. | 15 ft. |

Note: PG&E-defined minimum clearance is designed to meet or exceed all applicable regulatory requirements at all times, including FAC-003-4.

Table 2. NERC Minimum Vegetation Clearance Distance (MVCD) in Feet

| NERC Minimum Vegetation Clearance Distance (MVCD) in Feet | | | | |
|--------------------------------------------------------------|----------|--------|--------|--------|
| Elevation (feet) | 60/70 kV | 115 kV | 230 kV | 500 kV |
| 0 - 500 | 1.1 | 1.9 | 4 | 7 |
| 501 - 1000 | 1.1 | 1.9 | 4.1 | 7.1 |
| 1001 - 2000 | 1.1 | 1.9 | 4.2 | 7.2 |
| 2001 - 3000 | 1.2 | 2 | 4.3 | 7.4 |
| 3001 - 4000 | 1.2 | 2 | 4.3 | 7.5 |
| 4001 - 5000 | 1.2 | 2.1 | 4.4 | 7.6 |
| 5001 - 6000 | 1.2 | 2.1 | 4.5 | 7.8 |
| 6001 - 7000 | 1.3 | 2.2 | 4.6 | 7.9 |
| 7001 - 8000 | 1.3 | 2.2 | 4.7 | 8.1 |
| 8001 - 9000 | 1.3 | 2.3 | 4.8 | 8.2 |
| 9001 - 10000 | 1.4 | 2.3 | 4.9 | 8.3 |
| 10001 - 11000 | 1.4 | 2.4 | 5 | 8.5 |
| 11001 - 12000 | 1.4 | 2.5 | 5.1 | 8.6 |
| 12001 - 13000 | 1.5 | 2.5 | 5.2 | 8.8 |
| 13001 - 14000 | 1.6 | 2.6 | 5.3 | 8.9 |
| 14001 - 15000 | 1.6 | 2.7 | 5.4 | 9.1 |

Note: The maximum tree heights described in this document must always meet (or exceed) the NERC MVCD requirements described in this table.

EXHIBIT H-22-6



T&D Vegetation Management Hazard Notification

SUMMARY

A hazard notification arises when a vegetation condition affecting transmission or distribution lines requires urgent mitigation but does not pose an imminent threat. This vegetation condition could result from vegetation encroaching in the PG&E Clearance Requirement or it may arise from outside the ROW due to potential tree or limb failure on non-NERC lines (200kV and below). The purpose of this procedure is to:

1. Provide guidance for notification, communication, root cause analysis, and documentation of trees which qualify for Hazard Notification (HN), for both distribution and transmission systems.
2. Provide direction to PG&E employees and contractors to aid in communicating, coordinating and mitigating the hazard.
3. Ensure compliance of transmission and distribution systems with all applicable laws and regulations.
4. Provide guidance to PG&E employees and contractors for meeting or exceeding the requirements of North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management (VM) operations personnel

Vegetation management planning personnel

Vegetation management contractors

- Pre-inspection (PI)
- Tree contractor (TC)
- Quality control (QC)

SAFETY

NA

T&D Vegetation Management Hazard Notification

BEFORE YOU START

1. Review [TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)."](#)
2. Review the Definitions section of this document.
3. Review Appendix B of this document (minimum clearance requirements).
4. All VM employees and contractors must have up-to-date contact lists for Vegetation Management (VM) area personnel.

TABLE OF CONTENTS

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| 2 Data Entry, Work Request Generation, and Invoicing | 5 |
| 3 Invoicing, Documentation – Database Manager, TC, PI, and VPM..... | 6 |
| 4 Hazard Notification Form | 7 |
| 5 Incident Review and Follow-up..... | 7 |
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PROCEDURE STEPS

1 Notification Identification

1.1 When a hazard is found and a Hazard Notification (HN) is issued, the HN is first documented by one of the following methods:

1. Use the handheld device in the field to complete the electronic HN Form.
2. Complete the hard copy [TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form".](#)

T&D Vegetation Management Hazard Notification

1.2 PI or other First Responder must:

1. Provide hazard notifications in a manner that includes confirmation of notification receipt.

NOTE

Leaving a voice mail alone does not meet minimum notification requirements. A verbal or electronic (email or text message) response by the Supervising Vegetation Program Manager / Vegetation Program Manager (SVPMP / VPM) is required.

2. Complete the following:

- a. IF a hazard notification location (distribution or transmission) is identified by a VM employee or contractor,

THEN contact the appropriate SVPMP / VPM,

AND provide the following location / situation information:

- Hazard description
- Location information and access
- Field conditions

- b. IF the location requires immediate action,

THEN:

- (1) Coordinate hazard mitigation activities with the SVPMP / VPM.

- (2) Notify the appropriate PI.

- (3) Remain on site until relieved or until the tree crew arrives.



T&D Vegetation Management Hazard Notification

1.2 (continued)

NOTE

The tree will be worked and invoiced on a separate HN work request

3. Contact the Database Manager and provide the information necessary to complete a tag record in the Vegetation Management Database (VMD).
 - a. IF the First Responder is a PI on routine patrol using pre-loaded data,
THEN update the pre-loaded tree record in the handheld device with a “no trim” inventory record for the location.
 - b. IF a record of the tree does not exist in VMD,
THEN create a tree record in the handheld device with a “no trim” inventory record for the location.
4. Enter the prescribed clearance in the VMD tree comments field see Table 1. PG&E Clearance Requirements in Appendix B, Minimum Clearance Requirements.
5. Enter ‘HNP’ in the VMD Comments field.

1.3 The SVPMP / VPM must:

1. Contact the appropriate parties to direct emergency response needs.
2. Determine the best course of action if immediate response is not required.

1.4 For Hazard Notification on a **NERC** line, the SVPMP / VPM must:

1. Notify the SVPMP that mitigation has been completed and all VM personnel and contractor employees are clear of the line.
2. Notify the Transmission Operations Manager when the action is complete.
 - a. IF immediate vegetation work is required and the work involves heavy cut-back or a removal in a riparian area,
THEN take the action necessary to do the minimum work needed to achieve compliance,
AND follow the process described in [TD-7103P-08, “Transmission Vegetation Corrective Action Procedure.”](#)

T&D Vegetation Management Hazard Notification

2 Data Entry, Work Request Generation, and Invoicing

2.1 Whether created in the VMD by the Database Manager or downloaded from a handheld device, all records created for HN locations that are also used to generate Work Requests (WR) must use the appropriate priority code that identifies the:

- Immediate Location
- Urgent Location

2.2 Immediate Location

1. Upon receiving a call concerning an Immediate / Non-Contact or HN-Immediate Location, the Database Manager must:

- a. Create a new inspection tag record in the Vegetation Management Database (VMD).
- b. Enter HNP in the VMD tag number field.
- c. Create an Immediate / Non-Contact and HN-Immediate WR.
- d. The Immediate / Non-Contact and HN-Immediate WR must be:
 - (1) Generated separately as a tag:
 - IF HN-Immediate,
THEN use tag type = **Missed Tree** with tag number = **HNP**
 - IF Immediate/Non-Contact,
THEN use tag type = **Storm or Unforeseen** with tag number = **HNP**.
 - (2) Generated separately from existing work as Work Category = **Express**.
 - (3) Generated on the same business day and assigned to the Tree Crew (TC) designated by the VPM

T&D Vegetation Management Hazard Notification

2.3 Urgent Location

1. Upon receiving a call concerning a hazard notification location, but the location does not require immediate action, the Database Manager must:
 - a. Enter information into VMD using priority code **HN-Urgent**.
 - b. Generate and issue WR separately from existing work (as tag type = **Missed Tree** with tag number = **HNP** and Work Category = **Express**), unless directed by the SVPM / VPM to do otherwise.
 - c. Verify that no Hazard Notification records are “pending, not issued” or “pending, not complete”.
 - (1) IF the Database Manager is unavailable to enter information
THEN PI must enter information in the handheld device as a separate **HN-Urgent** tag record and transmit the same business day.

3 Invoicing, Documentation – Database Manager, TC, PI, and VPM

3.1 Database Manager must:

1. Deliver hard copy of the WR to the assigned TC by the end of the current work week.
 - a. IF the root cause of the HN is insufficient clearance by the TC or a TC miss,
THEN close out the WR as non-billable,
AND notify the SVPM / VPM and TC as soon as possible so the appropriate billing can be monitored,
AND change the VMD tag type in to **Poor Clear**.
 - b. IF there is an existing WR for the location (i.e. tree missed by TC),
THEN invoice the original WR with the HN WR as “non-billable”.

NOTE

If appropriate, the SVPM / VPM may elect to invoice on the HN WR with the original WR as non-billable. In either case, the TC and billing office must be given clear direction on how to invoice.

3.2 Enter the information into ITS to document Hazard Notification and close when complete.

T&D Vegetation Management Hazard Notification

4 Hazard Notification Form

4.1 The PI must:

1. Complete the top portion and Part I of the Hazard Notification form if filling out soft copy.

4.2 The local Supervising PI must:

1. Complete Part II: Root Cause Analysis of the Hazard Notification Form.
2. For NERC lines only, the SVPN will lead the root cause analysis and the supervising PI must review database records and location history to determine the root cause of the hazard notification location.
3. Forward the completed form to the SVPN / VPM **by the end of the next business day** after the HN location is identified.
4. Forward all completed HN forms related to transmission to the SVPN and the VM Operations Manager within the next 7 business days.

4.3 The SVPN / VPM must:

1. Complete Part III of the HN Form (transmission only)
2. File the completed HN Form in the local office.

5 Incident Review and Follow-up

5.1 The SVPN / VPM must:

1. Ensure that all HN locations are reviewed at the next local status meeting.

5.2 For NERC lines, the Transmission SVPN must:

1. Coordinate and lead the incident review and follow-up.
2. Discuss status at incident review meetings, including:
 - Root cause analysis
 - Identified root cause analysis trends
 - Action(s) needed to prevent recurrence
 - Timelines for any follow-up actions



T&D Vegetation Management Hazard Notification

5.2 (continued)

3. IF the HN is in a riparian area and only minimum clearance was achieved,
THEN the SVPM / VPM must follow up and accelerate the location through
the riparian review process.

6 Exceptions

6.1 For non-NERC transmission and distribution lines:

1. IF the area Operations Emergency Center (OEC, or "Storm Room") is open due to area storm activity
AND the contact (wind or failure) can be attributed to the storm activity,
THEN HN documentation and root cause analyses are not required,
AND the PI must contact the SVPM / VPM for direction on calling out TC,
creating handheld records, and generating WRs.
2. IF a location is a HN non-NERC transmission or a distribution line HN due to the failure
of a tree / branch that was overlooked during routine compliance patrol,
THEN all responsible parties must follow this procedure in its entirety.

6.2 For distribution lines only:

1. IF the location is a result of the failure of a live green tree with no visible sign of defect,
THEN all responsible parties must follow this procedure for hazard
notification and work generation,
AND there is no requirement to complete the HN Form, root cause analysis,
or an incident review.
2. IF a location is a distribution line HN due to the failure of a tree / branch that was
overlooked during routine compliance patrol,
THEN all responsible parties must follow this procedure in its entirety.
3. If the location is within a riparian or environmentally sensitive area,
THEN the VPM must initiate a conference call with the VM Operations Manager AND
VM Environmental staff to discuss the situation and the work to be performed, as soon
as reasonable possible.
 - a. The purpose of the consultation call is to ensure that the Manager is fully
informed on both operational and environmental risk.



T&D Vegetation Management Hazard Notification

END of Instructions

DEFINITIONS

Easement (or Right-of-Way) – The corridor of land under a transmission line needed to operate the line. “Easement” refers to the legal description of that corridor.

First Responder – A PG&E employee or contractor in the field, who identifies or responds to a potential imminent threat or Hazard Condition.

Hazard Condition – A vegetation condition affecting transmission or distribution lines which does not pose an imminent threat, but where the condition has the potential to become an imminent threat and is at or encroaching the PG&E clearance distance.

- **Non-ERC and Distribution Lines (4kV and 21kV)** – if the tree or a portion of the tree is in contact, shows evidence of contact with the high voltage conductors or poses an immediate threat to the conductors. The contact can result from growth, wind, or failure. See Exceptions section for specifics on handling failure vs. growth on distribution.
- **ERC Lines** – if the tree, any portion of the tree, an uprooted tree, other tree or branch failures, is at or approaching Hazard Notification Reporting distances. The approach to Reporting distances can result from growth, wind, or failure. See Table 1.

Imminent Threat – A vegetation condition affecting NERC transmission lines where it has been identified and confirmed by PG&E personnel and/or contractors that the vegetation condition is likely to cause a fault at any moment. This condition may arise from within or outside the electric transmission right-of-way (ROW), and may be the result of tree growth, potential tree or limb failure, or line movement due to sag or sway. For example:

- A tree that is uprooting and has the potential at any time to fail and fall into the NERC line; or,
- Vegetation growing in proximity to a NERC line that is at or approaching the FAC 003-4 Minimum Vegetation Clearance Distance (MVCD)

Minimum Vegetation Clearance Distance (MVCD) – Minimum vegetation clearance distance required to prevent flash-over. However, prudent vegetation maintenance practices dictate that substantially greater distances will be achieved at time of vegetation maintenance.

ERC-Regulated Transmission Lines (ERC lines) – Transmission lines operated at 200kV or higher and certain sub-200kV lines that are elements of a Major Western Electric Coordinating Council (WECC) Transfer Path.

T&D Vegetation Management Hazard Notification

Priority Codes – A specific priority code used when a Hazard Notification has been confirmed to exist.

- **Immediate/non-Contact** - Priority code used when it is determined that any growth-related vegetation may encroach within the PG&E Minimum Clearance Requirements or vegetation poses an immediate threat to the conductors.
- **HN-Immediate** – (applies to non-NERC transmission and distribution only) Priority code for any vegetation observed that is in contact with an un-insulated distribution primary conductor. This does not include detached limbs hanging from one conductor.
- **HN-Urgent** – (applies to distribution only) Priority code for any vegetation observed that is not immediate in nature but requires near-term attention.

Right-of-Way (ROW) – The corridor of land under a transmission line(s) needed to operate the line(s).

Riparian Area – A geographic area within 25 feet of the high water mark or the top of the bank, including but not limited to streams/watercourses, with or without water during dry season, wetlands, ditches, and ponds.

IMPLEMENTATION RESPONSIBILITIES

The vegetation management transmission team is responsible for the implementation, communication, and maintenance of this procedure and associated standard.

- The VM manager communicates this procedure to the VM stakeholders.
- The VM supervisor communicates this procedure to the operational work teams.

GOVERNING DOCUMENT

[TD-7103S, "Transmission Vegetation Management Standard \(TVMS\)"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

California Public Resource Code 4292

California Public Resource Code 4293

[CPUC General Order \(G.O.\) 95 Rule 35](#)

Federal Energy Regulatory Commission (FERC) Order No. 777

North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, [NERC FAC-003-4 Transmission Vegetation Management](#)



T&D Vegetation Management Hazard Notification

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7103P-08, "Transmission Vegetation Corrective Action Procedure"](#)

APPENDICES

Appendix A, Hazard Notification Roles & Responsibilities

Appendix B, Minimum Clearance Requirements, NERC Minimum Vegetation Clearance Distance (MVCD) in Feet.

ATTACHMENTS

[TD-7103P-09-F01, "Hazard Notification / Imminent Threat Form"](#)

DOCUMENT REVISION

TD-7103P-09, "T&D Vegetation Hazard Notification Procedure," dated 06/18/2014, Rev. 1

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management, Transmission

DOCUMENT OWNER

[REDACTED], Manager, Vegetation Management, Transmission

DOCUMENT CONTACT

[REDACTED], Expert Program Manager, Vegetation Management, Transmission

REVISION NOTES

| Where? | What Changed? |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Summary | Added reference to North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management. |

T&D Vegetation Management Hazard Notification

| Where? | What Changed? |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definitions section | Updated Minimum Vegetation Clearance Distance (MVCD) definition. |
| Compliance Requirements/Regulatory Commitment section | Updated link to the FAC-003-4 version: North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management |
| Appendix B | Added Table 2. NERC Minimum Vegetation Clearance Distance (MVCD) in Feet. |

T&D Vegetation Management Hazard Notification

APPENDIX A, HAZARD NOTIFICATION ROLES & RESPONSIBILITIES

| | |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Responder: PG&E Contractor (PI), VM Personnel | <ul style="list-style-type: none"> • HN transmission - Notify SVPM/VPM as soon as reasonably practical. • Identify hazard <ul style="list-style-type: none"> ○ NERC lines: help determine if hazard might be considered an imminent threat. ○ All transmission lines: determine if location and likely mitigation measures raise any environmental concerns per riparian review process. • Notify SCUF. • When requested, contact TC per SVPM/VPM/SCUF instructions. • Contact Database Manager for tag creation. • Update/create preload record to inventory trees noting HN and prescribed clearance. • Distribution HN - Notify VPM/PI as soon as reasonably practical. • Complete Part I – HN Form. • Stay on-site until released by SVPM/VPM if requested. |
| Local Area SVPM / VPM | <ul style="list-style-type: none"> • Guide appropriate emergency response based on description of situation, site conditions, and tree condition. • Incident review. • HN transmission – Notify Supervising Transmission Program Manager as soon as reasonably practical. • As needed, monitor invoicing and work completion. • Maintain long-term paper file at local VM office. |
| PI / Supervising-PI | <ul style="list-style-type: none"> • Help identify and confirm hazard. • For NERC lines, assist local SVPM/VPM to determine environmental concerns. • Implement emergency response per SVPM/VPM. • Complete Part II– HN form. • Conduct incident review. |
| Database Manager / Supervising-PI | <ul style="list-style-type: none"> • Create Missed tree tag. • Issue WR with Work Category Express and forward to TC same day for Immediate/Non-Contact and HN-Immediate or by next day for HN-Urgent. • Monitor work completion. |
| TC | <ul style="list-style-type: none"> • Identify hazard. <ul style="list-style-type: none"> ○ HN NERC line: determine if hazard might be imminent. ○ Determine if location and likely mitigation measures raise environmental concerns. • Notify VPM/Forester as soon as practical. • Notify SCUF. • Contact Database Manager for tag creation. • Complete tree work as directed by SVPM/VPM. |
| Supervising Transmission Program Manager | <ul style="list-style-type: none"> • Lead incident review and follow-up efforts. |

T&D Vegetation Management Hazard Notification

APPENDIX B, MINIMUM CLEARANCE REQUIREMENTS

Table 1. PG&E Clearance Requirements

| Voltage | 60/70 kV | 115 kV | 230 kV | 500 kV |
|------------------------------------|----------|--------|--------|--------|
| PG&E Minimum Clearance Requirement | 4 ft. | 10 ft. | 10 ft. | 15 ft. |

Note: PG&E defined minimum clearance is designed to meet or exceed all applicable regulatory requirements at all times, including FAC-003-4.

Table 2. NERC Minimum Vegetation Clearance Distance (MVCD) in Feet

| NERC Minimum Vegetation Clearance Distance (MVCD) in Feet | | | | |
|-----------------------------------------------------------|----------|--------|--------|--------|
| Elevation (feet) | 60/70 kV | 115 kV | 230 kV | 500 kV |
| 0 - 500 | 1.1 | 1.9 | 4 | 7 |
| 501 - 1000 | 1.1 | 1.9 | 4.1 | 7.1 |
| 1001 - 2000 | 1.1 | 1.9 | 4.2 | 7.2 |
| 2001 - 3000 | 1.2 | 2 | 4.3 | 7.4 |
| 3001 - 4000 | 1.2 | 2 | 4.3 | 7.5 |
| 4001 - 5000 | 1.2 | 2.1 | 4.4 | 7.6 |
| 5001 - 6000 | 1.2 | 2.1 | 4.5 | 7.8 |
| 6001 - 7000 | 1.3 | 2.2 | 4.6 | 7.9 |
| 7001 - 8000 | 1.3 | 2.2 | 4.7 | 8.1 |
| 8001 - 9000 | 1.3 | 2.3 | 4.8 | 8.2 |
| 9001 - 10000 | 1.4 | 2.3 | 4.9 | 8.3 |
| 10001 - 11000 | 1.4 | 2.4 | 5 | 8.5 |
| 11001 - 12000 | 1.4 | 2.5 | 5.1 | 8.6 |
| 12001 - 13000 | 1.5 | 2.5 | 5.2 | 8.8 |
| 13001 - 14000 | 1.6 | 2.6 | 5.3 | 8.9 |
| 14001 - 15000 | 1.6 | 2.7 | 5.4 | 9.1 |

Note: The maximum tree heights described in this document must always meet (or exceed) the NERC MVCD requirements described in this table.

EXHIBIT H-23

Changes to HN-Immediate Execution Bulletin

SUMMARY

This utility bulletin discusses the changes specific to first responder responsibilities when handling an immediate hazard notification situation impacting distribution facilities. Additionally, the timeline for documentation of an “HN immediate” has been specified.

Level of Use: Informational Use

AFFECTED DOCUMENT

[Utility Procedure TD-7103P-09, “Vegetation Management Hazard Notification Procedure”](#)

TARGET AUDIENCE

Vegetation Management field employees and contractors

WHAT YOU NEED TO KNOW

The following procedural changes are effective immediately.

1 First Responder

- 1.1 All HN-Immediate situations must be treated as an emergency location (e.g. a wire down condition).
- 1.2 The first responder (or qualified individual) must:

1. REMAIN onsite until the mitigation by a tree crew or PG&E crew is complete, OR
2. OBTAIN approval from local vegetation program manager (VPM) to leave site unattended.
 - a. Prior to issuance of approval, the VPM must:
 - (1) DEVELOP and DOCUMENT a mitigation plan which must include the estimation of:
 - Site re-occupation
 - Date and time of completion

2 Completion Timelines

- 2.1 All HN-Immediate scenarios should be physically mitigated WITHIN 24-hours from the initial observation by a PG&E representative.
 - INPUT the completion date and time into the database WITHIN 24-hours of initial observation.

Changes to HN-Immediate Execution Bulletin

NOTE

If local operations “soft close” in system, provide specific directions to tree vendor to close and bill appropriately in back office for each HN-Immediate.

1. In the event the 24-hour timeline cannot be achieved, the first responder must NOTIFY the VPM by phone call, text message or email. See Section 3 for guidance on interferences.
2. The VPM must NOTIFY the supervising vegetation program manager (SVPMP) and regional manager by email.
 - The email must include the reason for delay and estimated time of completion.

2.2 In the database, ENTER the date and time of completion WITHIN 24-hours of initial observation.

3 Interferences

1. Efforts to mitigate the immediate situation must not be delayed due to:
 - Customer or agency objections
 - Environmental processes, bird nests, permits (i.e. city/county) or similar.
2. All actions performed outside the routine permit process must be promptly reported to the appropriate agency.

4 Safety Considerations

4.1 In all cases, the safety of the employees, contractors, and public must be ensured.

This includes but is not limited to:

- Site safety
- Fatigue due to long work hours
- Line clearance
- Low-light conditions
- Extreme or threatening customer

4.2 IF a customer displaying extreme or threatening behavior, THEN the responding personnel must leave the site immediately and CONTACT the VPM.



Changes to HN-Immediate Execution Bulletin

- 4.3 IF low-light conditions exist, THEN the first responder must CONTACT the VPM to obtain approval per Step 1.2.
- 4.4 IF a line clearance is required, THEN perform the following steps:
 1. CALL the Electric Emergency Dispatch Center at 1-415-973-7000.
 2. REQUEST an immediate clearance and OIS incident number.
- 4.5 IF the line clearance and mitigation work cannot be performed within 24-hours, THEN escalate to the SVPM.

DOCUMENT APPROVER

[REDACTED], Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Manager, Vegetation Management

INCLUSION PLAN

This is a temporary change in the procedure. Any changes that become permanent will be incorporated in the next revision of the procedure; estimated Q3 2020.

EXHIBIT H-24-1

Vegetation Management Hazard Tree Rating and Scoring

SUMMARY

This procedure describes how to use the Hazard Tree Rating System (HTRS) and Scoring Matrix spreadsheet to evaluate the condition of a whole tree or portion of a tree that has the potential to impact PG&E facilities if it fails and strikes them. The HTRS and Scoring Matrix help vegetation managers prioritize work, examine budget impacts, abate trees, and assess abatement decisions. The HTRS and Scoring Matrix assist personnel in making decisions about whether to work specific trees and in what priority.

This procedure also provides guidance for PG&E employees and contractors to meet or exceed the requirements of North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management (VM) governance & support

VM operations

VM contractors

- Pre-inspection (PI) contractors
- Tree crew (TC) contractors
- Quality control (QC) contractors

SAFETY

All workers are responsible for following Best Management Practices (BMPs) when addressing environmental impacts.

BEFORE YOU START

1. Before performing this procedure:
 - a. Become familiar with using Excel spreadsheets.
 - b. Read the following standards and procedures:
 - [TD-7102S, "Distribution Vegetation Management Standard"](#)
 - [TD-7102P-01, "Distribution Routine Patrol Procedure"](#)
 - [TD-7103S, "Transmission Vegetation Management Standard"](#)
 - [TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure"](#)

Vegetation Management Hazard Tree Rating and Scoring

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PROCEDURE STEPS

Overview of Evaluation Process

Each HTRS spreadsheet can be used to record the results of up to three assessments, where an assessment is an evaluation of a whole tree, a part of a tree, or both.

There are three components to using the HTRS and Scoring Matrix tool:

- Determine whether the tree or tree part is likely to strike a facility.
- Determine whether the tree or tree part is likely to fail.
- Determine what impacts could occur if the tree or tree part fails and/or strikes a facility.

This is accomplished by doing the following:

1. Rating the Likelihood for Strike and Likelihood of Failure.
2. Adding the resultant Likelihood of Strike and Likelihood of Failure Scores into a single Tree Matrix Score within the HTRS.
The Impacts rating is directly derived from these combined scores.
3. Plotting the Tree and Impacts scores in the Scoring Matrix.



Vegetation Management Hazard Tree Rating and Scoring

The Procedure Steps are divided into the following sections:

- **Section 1 for Strike Likelihood:** Determine whether a tree or part of a tree has the potential to make contact with electrical facilities by using the first section of the HTRS spreadsheet.
- **Section 2 for Failure Likelihood:** Determine the condition of a tree or part of a tree and evaluate the surrounding environment by using the second section of the HTRS spreadsheet.
- **Section 3 for Impacts:** Determine the impacts that could occur if a tree or part of a tree makes contact with electrical facilities by using the third section of the HTRS spreadsheet.
- **Section 4 for Plotting Matrix Scores:** Plot Tree Matrix Scores and Impacts Matrix Scores on the Scoring Matrix

All steps in the Procedure Steps section are performed by both PG&E VM employees and VM contractors.

1 Calculate Strike Likelihood in First Section of HTRS Spreadsheet

- 1.1 Review Appendix A, Overview for Scoring Likelihood of Strike, AND then RETURN to this section to perform the steps below.
- 1.2 Open the [TD-7102P-07-F01, Hazard Tree Rating System](#) spreadsheet or use a hardcopy of the HTRS spreadsheet provided by the supervisor.
- 1.3 READ the instruction at the top of the spreadsheet, which states:

"Decide if the assessment will evaluate a tree or part of a tree that has the potential to make contact with electrical facilities.

More than one assessment can be completed on a single tree."

| Decide if the assessment will evaluate a tree or part of a tree that has the potential to make contact with electrical facilities. More than one assessment can be completed on a single tree. | | | | | | | | Assessment | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------|------------|------|------|
| ELEMENT | CONDITION (RATING IN BLUE) | | | | | | | A | B | C |
| | STRIKE LIKELIHOOD | | | | | | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) | Distance ≤ 75% of tree height (3) | Distance ≤ 50% of tree height (5) | Distance ≤ 25% of tree height (7) | | | |
| Path (part most likely to fail) | | | | No path to facility (0) | Possible path or domino to facility (1) | Possible path or domino to facility (3) | | | | |
| Lean (part most likely to fail) | Severe away from facility (-7) | Mod away from facility (-5) | Slight away from facility (-3) | Vertical or slight to facility (3) | Mod to facility (5) | Severe to facility (7) | | | | |
| Weight (part most likely to fail) | Severe away from line (-5) | Mod away from line (-3) | Slight away from line (-1) | Neutral or slight line side (1) | Mod line side (3) | Severe line side (5) | | | | |
| | | | | | | | STRIKE TOTAL | 0 | 0 | 0 |
| <1=None; STOP | 1-4= Very Low (VL) | 5-6= Low (L) | 7-11= Mod (M) | 12-16= High (H) | >16 Very High (VH) | | Strike Likelihood Level | STOP | STOP | STOP |
| Very Low= 0 | Low=0 | Mod=1 | High=2 | Very High=3 | | | Strike Matrix Score | 0 | 0 | 0 |

Vegetation Management Hazard Tree Rating and Scoring

NOTE

When using an electronic version of the HTRS spreadsheet, Excel automatically calculates totals and levels, and displays the results in the rows at the bottom of each section.

When using a printed version of the HTRS spreadsheet, it is necessary to manually compute and write the assessment values, totals, and levels on the paper spreadsheet.

1.4 The first section of the spreadsheet lists the Elements to be evaluated for strike likelihood, with conditions that could apply and the number of points assigned to each condition.

| Decide if the assessment will evaluate a tree or part of a tree that has the potential to strike a facility or line. More than one assessment can be completed on this page. | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|--------------------------------|-----------------------------------|
| ELEMENT | CONDITION (RATING IN BLUE) | | | |
| STRIKE LIKELIHOOD | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) |
| Path (part most likely to fail) | | | | |
| Lean (part most likely to fail) | Severe away from facility (-7) | Mod away from facility (-5) | Slight away from facility (-3) | |
| Weight (part most likely to fail) | Severe away from line (-5) | Mod away from line (-3) | Slight away from line (-1) | |

1.5 For each of the four Elements in the left-hand column, DETERMINE the applicable condition(s).

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

| ELEMENT | CONDITION (RATING IN BLUE) | | | | | | |
|----------------------------------------------------------------------------------|--------------------------------|------------------------------------|----------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| STRIKE LIKELIHOOD | | | | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) | Distance ≤ 75% of tree height (3) | Distance ≤ 50% of tree height (5) | Distance ≤ 25% of tree height (7) |

Vegetation Management Hazard Tree Rating and Scoring

1.5 (continued)

The columns A, B, and C are used to rate the assessment.

For example, if the condition "Distance \leq 25% of tree height" applies to the "Total height & distance..." element, enter or write a 7 in column A.

| | Assessment | | |
|----------------------------------------|------------|---|---|
| | A | B | C |
| Distance \leq 25% of tree height (7) | 7 | | |

1.6 RATE the whole tree, part of tree, or both that, might strike by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

1.7 For printed version of HTRS spreadsheet:

1. ADD the numbers in a rating column (A or B or C) AND WRITE the sum in the appropriate STRIKE TOTAL column on the spreadsheet. Repeat for each rating column.

| | Assessment | | |
|----------------------------------------|------------|----------|----------|
| | A | B | C |
| Distance \leq 25% of tree height (7) | 7 | | |
| Likely path or domino to facility (3) | 3 | | |
| Severe to facility (5) | 5 | | |
| Severe line side (5) | 3 | | |
| STRIKE TOTAL | 18 | 0 | 0 |

Vegetation Management Hazard Tree Rating and Scoring

1.7 (continued)

2. Based on the Strike Total, WRITE the HTRS Likelihood of Strike rating recommendation for the tree in the appropriate rating column (A or B or C).
 - a. For a Strike Total of zero (0), WRITE "STOP."

For example, if the Strike Total for a tree is 18, its Strike Likelihood Level is greater than 16, so equal to VH for Very High.

| STRIKE TOTAL | 18 | 0 | 0 | | |
|-----------------|--------------------|-------------------------|----|------|------|
| 12-16= High (H) | >16 Very High (VH) | Strike Likelihood Level | VH | STOP | STOP |

3. WRITE the letter(s) for the Strike Likelihood Level under the appropriate rating column (A or B or C).
4. WRITE the number for the matching Strike Matrix Score in the gray cell under the appropriate rating column (A or B or C).

For example, the Strike Matrix Score for Very High equals 3.

| STRIKE TOTAL | 18 | 0 | 0 | | |
|-----------------|--------------------|-------------------------|----|------|------|
| 12-16= High (H) | >16 Very High (VH) | Strike Likelihood Level | VH | STOP | STOP |
| Very High=3 | | Strike Matrix Score | 3 | 0 | 0 |

1.8 LOOK at the Strike Total for each rating column.

1. IF the Strike Total is less than 1,

THEN the whole tree, part of tree, or both is **not** likely to strike facilities; EXIT this procedure;

OTHERWISE continue to the Section below.

Vegetation Management Hazard Tree Rating and Scoring

2 Calculate Failure Likelihood in Second Section of HTRS Spreadsheet

The second section of the spreadsheet lists the Elements to be evaluated for failure likelihood, with conditions that could apply and the number of points assigned to each condition.

| FAILURE LIKELIHOOD | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|------------------------------------|----------------------------|----------------------------|
| Tree species, age, condition (health, vigor, insect/disease & pests, fire, and mechanical injury, deformity, decay, etc.) & environmental influences | | | | | |
| Tree age (whole tree) | Immature (1) | Mature (3) | Over Mature (7) | Dead (20) | |
| Disease (whole or part most likely to fail) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Oldest defects present for what % of trees life? | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) |

- 2.1 Review Appendix B, Overview for Scoring Likelihood of Failure, AND then RETURN to this section to perform the steps below.
- 2.2 Refer to Appendix D, Recommended Species-Specific Ratings for the ratings (bandwidths) to use for the following two Elements:
 - Species Failure
 - Whole or Partial Failure
 1. IF the tree species for the Species Failure or Whole or Partial Failure Element is listed in Appendix D, Recommended Species-Specific Ratings,
THEN use the condition rating from Appendix D, Recommended Species-Specific Ratings;
OTHERWISE, use the condition rating stated in the HTRS spreadsheet.

| | | | | | | | | | |
|-----------------------------------------|--------------|---------|--------------|----------------|--------------------|-------------|---|--|--|
| Species failure potential (unknown = 3) | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) | Unknown (3) | 1 | | |
| Whole or partial failure most likely? | | | Partial (5) | Whole tree (7) | Equally Likely (9) | Unknown (3) | 5 | | |

- 2.3 For each of the 15 Elements in the left-hand column, DETERMINE the applicable condition(s).

| FAILURE LIKELIHOOD | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|------------------------------------|----------------------------|----------------------------|
| Tree species, age, condition (health, vigor, insect/disease & pests, fire, and mechanical injury, deformity, decay, etc.) & environmental influences | | | | | |
| Tree age (whole tree) | Immature (1) | Mature (3) | Over Mature (7) | Dead (20) | |
| Disease (whole or part most likely to fail) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Oldest defects present for what % of trees life? | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) |

Vegetation Management Hazard Tree Rating and Scoring

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

2.4 RATE the tree or part of the tree that might fail by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

For example, if the condition "Pathogen—does not cause defect (3)" applies to the Element "Insects (whole tree)", enter or write a 3 in column A for that element.

| | | | | | | |
|----------------------|----------|-------------------------------------|------------------------------------|----------------------------|----------------------------|---|
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) | 3 |
|----------------------|----------|-------------------------------------|------------------------------------|----------------------------|----------------------------|---|

2.5 For printed version of HTRS spreadsheet:

1. ADD the numbers in rating column A, AND WRITE the sum in the appropriate FAILURE TOTAL box on the spreadsheet. Repeat for rating columns B and C.

| | | | |
|---------------|----|---|---|
| FAILURE TOTAL | 31 | 0 | 0 |
|---------------|----|---|---|

2. Follow the HTRS Likelihood of Failure rating recommendation for the tree, based on the Failure Total.
 - a. WRITE the letter for the Failure Likelihood Level and the number for the Failure Matrix Score in the appropriate boxes under the appropriate rating column (A or B or C).

For example, if the Failure Total for a tree is 31,

| <24=Very Low (VL) | 24-37= Low (L) | 38-55=Mod (M) | 56-82= High (H) | >82= Very High (VH) |
|-------------------|----------------|---------------|-----------------|---------------------|
| Very Low=0 | Low=1 | Mod=2 | High=3 | Very High=4 |

Then its Failure Likelihood Level is L for Low, and its Failure Matrix Score is 1 for Low.

| | | | |
|--------------------------|----|----|----|
| FAILURE TOTAL | 31 | 0 | 0 |
| Failure Likelihood Level | L | VL | VL |
| Failure Matrix Score | 1 | 0 | 0 |

3. ADD the resultant Strike Matrix Score (see Section 1, above) **and** the Failure Matrix Score into a single Tree Matrix Score AND WRITE the sum in the appropriate gray box.

For example, add the Strike Matrix Score of 3 to the Failure Matrix Score of 1 to obtain the Matrix Tree Score of 4.

Vegetation Management Hazard Tree Rating and Scoring

| | | | |
|--------------------------|----|----|----|
| FAILURE TOTAL | 31 | 0 | 0 |
| Failure Likelihood Level | L | VL | VL |
| Failure Matrix Score | 1 | 0 | 0 |
| Tree Matrix Score | 4 | 0 | 0 |

3 Calculate Impacts in Third Section of HTRS Spreadsheet

The third section of the spreadsheet lists the Elements to be evaluated for impacts, with conditions that could apply and the number of points assigned to each condition.

| IMPACTS | | | | | | | |
|---------------------------------------|------------------------------|------------------------|-----------------------|-------------------------|--------------------|-----------------------------|----------------|
| Roads (below conductor) | None or local low volume (0) | Residential street (1) | Local high volume (3) | Dead end or blocked (4) | 2 lane highway (4) | 4 lane highway (5) | Interstate (6) |
| Structures (below conductor) | None (0) | | Fence or shed (1) | Garage (3) | House (5) | Care facility or school (7) | |
| Population density (general vicinity) | | | | Low (1) | Moderate (3) | High (5) | |
| Emergency response time (in minutes) | | | | <30 = Short (1) | <45 = moderate (5) | >45 min=Long (7) | |

3.1 Review Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability, AND then RETURN to this section to perform the steps below.

3.2 Refer to Appendix D, Recommended Species-Specific Ratings for the ratings (bandwidths) to use for the following Element:

- Time of Year Species Likely to Fail

1. IF the tree species for the Time of Year Species Likely to Fail is listed in Appendix D, Recommended Species-Specific Ratings,

THEN use the condition rating from Appendix D, Recommended Species-Specific Ratings;

OTHERWISE, use the condition rating stated in the HTRS spreadsheet.

| | | | | | | | |
|-------------------------------------|---------------|--------------|---------------|--------------------------------|-------------|--|--|
| Time of year species likely to fail | Nov-March (1) | Nov-June (5) | July-Oct (11) | Equally in winter & summer (7) | Unknown (7) | | |
|-------------------------------------|---------------|--------------|---------------|--------------------------------|-------------|--|--|

3.3 For each of the 15 Elements in the left-hand column, DETERMINE the applicable condition(s).

| IMPACTS | | | | | | | |
|---------------------------------------|------------------------------|------------------------|-----------------------|-------------------------|--------------------|-----------------------------|----------------|
| Roads (below conductor) | None or local low volume (0) | Residential street (1) | Local high volume (3) | Dead end or blocked (4) | 2 lane highway (4) | 4 lane highway (5) | Interstate (6) |
| Structures (below conductor) | None (0) | | Fence or shed (1) | Garage (3) | House (5) | Care facility or school (7) | |
| Population density (general vicinity) | | | | Low (1) | Moderate (3) | High (5) | |
| Emergency response time (in minutes) | | | | <30 = Short (1) | <45 = moderate (5) | >45 min=Long (7) | |

Vegetation Management Hazard Tree Rating and Scoring

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

3.4 RATE the type of impacts that might occur due to whole tree or partial tree failure by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

For example, if the condition "Care facility or school (7)" applies to the "Structures (below conductor)" element, enter or write a 7 in column A for that element.

| | | | | | | |
|------------------------------|----------|-------------------|------------|-----------|-----------------------------|---|
| Structures (below conductor) | None (0) | Fence or shed (1) | Garage (3) | House (5) | Care facility or school (7) | 7 |
|------------------------------|----------|-------------------|------------|-----------|-----------------------------|---|

3.5 **For printed version of the spreadsheet:**

1. ADD the numbers in rating column A AND WRITE the sum in the appropriate Impacts Total box on the spreadsheet. Repeat for rating columns B and C.

| | | | |
|---------------|----|---|---|
| IMPACTS TOTAL | 63 | 0 | 0 |
|---------------|----|---|---|

Vegetation Management Hazard Tree Rating and Scoring

3.5 (continued)

2. Follow the HTRS Impacts rating recommendation for the tree, based on the Impacts Total.

For example, if the Impacts Total for a tree is 63, its Impacts Matrix Level is H for High.

| | | IMPACTS TOTAL | 63 | 0 | 0 |
|----------------|--------------------|---------------|----|----|----|
| 50-66 High (H) | >66 Very High (VH) | Impacts Level | H | VL | VL |

3. WRITE the Impacts Level in the cell under the appropriate rating column (A or B or C).

For example, an Impacts Level of Very High (VH) equals an Impacts Matrix Score of 4.

| | | IMPACTS TOTAL | 63 | 0 | 0 |
|----------------|--------------------|----------------------|----|----|----|
| 50-66 High (H) | >66 Very High (VH) | Impacts Level | H | VL | VL |
| High=3 | Very High=4 | Impacts Matrix Score | 3 | 0 | 0 |

4 Plot Tree and Impacts Matrix Scores on Scoring Matrix

PG&E recommends that trees scoring in the:

- Dark-grey shaded cells should be abated.
- Light shaded cells might not require abatement.
- Un-shaded cells may be abated, if prudent.

| Tree Score | 7 (Very High) | | | | |
|--------------|---------------|--------------|---------|----------|---------------|
| | 6 (High) | | | | |
| | 5 (High) | | | | |
| | 4 (Mod) | | | | |
| | 3 (Mod) | | | | |
| | 1, 2 (Low) | | | | |
| 0 (Very Low) | 0 (Very Low) | 1 (Low) | 2 (Mod) | 3 (High) | 4 (Very High) |
| | | Impact Score | | | |

Vegetation Management Hazard Tree Rating and Scoring

4.1 VIEW the Scoring Matrix by clicking on the **Scoring Matrix** tab at the bottom of the HTRS spreadsheet.

- PLOT the Tree Matrix Score and the Impacts Matrix Score for each tree on the Scoring Matrix by writing an "xx" in the box where these two values intersect.

For example, if the Tree Score is 4 for Moderate, and the Impact Score is 3 for High, write "XX" as shown below.

| | | | | | | |
|------------|---------------|---------|---------|----------|---------------|--|
| | 7 (Very High) | | | | | |
| | 6 (High) | | | | | |
| | 5 (High) | | | | | |
| Tree Score | 4 (Mod) | | | | XX | |
| | 3 (Mod) | | | | | |
| | 1, 2 (Low) | | | | | |
| | 0 (Very Low) | | | | | |
| | 0 (Very Low) | 1 (Low) | 2 (Mod) | 3 (High) | 4 (Very High) | |
| | Impact Score | | | | | |

END of Instructions

DEFINITIONS

Hazard Tree Rating System (HTRS): A spreadsheet designed to be used as a decision making tool for computing the Tree Score and Impact values for entering into the Scoring Matrix.

IMPLEMENTATION RESPONSIBILITIES

The Document Owner is responsible for the implementation, communication, and maintenance of this procedure. The Document Owner issues training and compliance materials annually.

VM contractors are responsible for training all employees before they perform PG&E VM work and for providing documentation of this training.

All PG&E VPMs and VM contractors are responsible for knowing and complying with this procedure.

GOVERNING DOCUMENT

[TD-7102S, "Distribution Vegetation Management Standard"](#)



Vegetation Management Hazard Tree Rating and Scoring

[TD-7103S, "Transmission Vegetation Management Standard"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

ANSI Standard, NCA 300, Part 7

[CPUC General Order 95, Rule 35](#)

Federal Energy Regulatory Commission (FERC) Order No. 777

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

North American Electric Reliability Council (NERC) Standards for Vegetation Management, FAC-003-04

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[TD-7102P-01, "Distribution Routine Patrol Procedure"](#)

[TD-7102P-07-F01, Hazard Tree Rating System](#)

[TD-7103P-01, "Transmission Routine Non-Orchard Patrol Procedure"](#)

APPENDICES

Appendix A, Overview for Scoring Likelihood of Strike

Appendix B, Overview for Scoring Likelihood of Failure

Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability

Appendix D, Recommended Species-Specific Ratings

ATTACHMENTS

NA

DOCUMENT REVISION

TD-7102P-07, "Vegetation Management Hazard Tree Rating and Scoring," Rev. 1, 10/13/14



Vegetation Management Hazard Tree Rating and Scoring

DOCUMENT APPROVER

[REDACTED], Manager, Senior Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Supervising Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Supervising Vegetation Program Manager

REVISION NOTES

| Where? | What Changed? |
|----------------|------------------------------------------------------------------------------|
| Whole document | Rewritten to add overview information and detailed steps with screen images. |

Vegetation Management Hazard Tree Rating and Scoring

Appendix A, Overview for Scoring Likelihood of Strike

Page 1 of 1

1. READ the "Overview for Scoring Likelihood of Strike" in the table below,

THEN RETURN to Section 1. Calculate Strike Likelihood in First Section of HTRS Spreadsheet to perform the steps. Do **not** take action on the instructions in the table below.

| Overview for Scoring Likelihood of Strike | |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Total height & distance to the conductor or the part that is most likely to fail | <ol style="list-style-type: none"> 1. WHEN the tree is shorter than the facilities, OR the distance to the conductor is more than the height of the tree or the part most likely to fail, THEN the tree cannot strike; EXIT this procedure. As the distance from the tree to the conductor decreases in relation to the tree's height, the ratings increase. 2. INCLUDE slope. 3. EVALUATE height and distance from the conductors of that part from where it will "hinge." |
| Path (part most likely to fail) | <ol style="list-style-type: none"> 1. Some trees are tall enough to strike, but are not likely to, because the path is blocked. 2. Have conditions changed since the last inspection such that the tree currently has a path to strike? |
| Lean (part most likely to fail) | <ol style="list-style-type: none"> 1. EVALUATE the lean of the main stem(s) or portions of the tree most likely to fail regardless of weight distribution. 2. IF a nearly horizontal branch is being evaluated, AND it occurs perpendicularly and directly over the lines, THEN USE the Severe to Facility rating for lean. |
| Weight (part most likely to fail) | <ol style="list-style-type: none"> 1. EVALUATE the weight distribution of the tree or portion most likely to fail regardless of lean. 2. IF a nearly horizontal branch is being evaluated AND it occurs perpendicularly and directly over the lines, THEN USE the Severe Line Side rating for weight. |
| Strike Total | The total of the height/distance, path, lean, and weight ratings. |
| Strike Likelihood Level | <ol style="list-style-type: none"> 1. FIND the corresponding bandwidth that the strike total matches. <p>This is the Strike Likelihood rating, signified by letter: VL, L, M, H or VH.</p> |
| Strike Matrix Score | <ol style="list-style-type: none"> 1. TRANSLATE the rating (VL, L, M, H, VH) from the Strike Likelihood line into a Matrix score (0, 1, 2, 3, or 4). |

Vegetation Management Hazard Tree Rating and Scoring

Appendix B, Overview for Scoring Likelihood of Failure

Page 1 of 3

1. READ the "Overview for Scoring Likelihood of Failure" in the table below,

THEN RETURN to Section 2. Calculate Failure Likelihood in Second Section of HTRS Spreadsheet to perform the steps. Do **not** take action on the instructions in the table below.

| Overview for Scoring Likelihood of Failure | |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Tree Age (whole tree) | <p>Exact age is not required.</p> <ol style="list-style-type: none"> 1. ESTIMATE age, taking species into consideration. Tree size is only an indicator of age. 2. INCLUDE dead trees in this line item. 3. Evaluate age regardless of condition. Distinguish DEAD from DEFECTIVE (see below). |
| Disease (whole or part most likely to fail) | Some diseases are fatal to a tree; others are nuisances, but when combined with other agents, might be a problem. |
| Insects (whole tree) | Some insects are fatal to a tree; others are nuisances, but when combined with other agents, might be a problem. |
| Oldest defect present for what % of tree's life | <p>A Defect is a reduction of wood strength (structural integrity). Lean is not necessarily a defect. "Dead" is not necessarily a defect.</p> <p>The longer amount of time an agent of decline has to work on a tree, the more effect it can have.</p> <ol style="list-style-type: none"> 1. EVALUATE Defect Severity. |
| Severity caused by combination of defects (≤ 1 defect use 0) | <ol style="list-style-type: none"> 1. IF there appears to be a combination of defect(s) or disease and insects, THEN evaluate the indications of the defect(s), including combined defects, to determine Severity. |
| Defect extent (worst radially in the log) | <ol style="list-style-type: none"> 1. INDICATE the proportion of the log, radially (two dimensionally) affected by defect(s). |
| Defect distribution (worst vertically in the tree) | <p>What proportion of the tree vertically is affected by defect(s)?</p> <p>Is there downward moving rot from an entry point further up the tree?</p> <p>Is the decay uniform along its vertical distribution?</p> |
| Clues from surrounding trees/stand | <p>What types of indications of overall tree or stand health are visible in the surrounding trees?</p> <p>Are others of the same species in similar or worse condition?</p> <p>Have stand conditions changed since the last inspection that exposed the tree to new environmental pressures?</p> |

Vegetation Management Hazard Tree Rating and Scoring

| Overview for Scoring Likelihood of Failure | |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Tree condition (of whole tree or part most likely to fail) | <ol style="list-style-type: none"> 1. IF a tree is failing when the inspector arrives (Already failing), THEN immediately call for tree crew. 2. EVALUATE the tree's overall condition and circumstances: <ul style="list-style-type: none"> • Vigorous? Well growing? Healthy? • Good taper (height to diameter ratio)? • Does the tree have good color; needle length or leaf shape & size; and internode length, etc.? • Are there wounds, die back, conks, splits, dead limbs, seepage, included bark, swellings, cat-faces, etc.? • Are roots buried or severed? • Are there other adverse environmental influences? • Have there been changes due to adjacent tree work or any other kind of work since the last inspection that would increase a tree's failure likelihood? • Is the tree wind-firm? 3. GIVE a dead tree or dead part of the tree its own category. 4. Evaluate co-dominance in the tree. <ul style="list-style-type: none"> • Is co-dominance in the lower part of the tree (lowest 25% of total height)? • Is co-dominance in the middle part of the tree (up to 75% of total height)? • Is co-dominance in the top part of the tree? • Is there included bark? If yes, how severe? |
| Species failure potential (unknown = 3) | Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| Whole or partial failure most likely? | Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| Tree canopy size or sail (part most likely to fail) | <ol style="list-style-type: none"> 1. EVALUATE the amount of canopy the tree has (sail or wind resistance) relative to the trees surrounding trees. |
| Wind exposure (topography & position in stand) | <ol style="list-style-type: none"> 1. CONSIDER the tree's exposure to wind: <ul style="list-style-type: none"> • Where on the slope is the tree located? On the ridge (high winds), mid slope (moderate winds) or gulch bottom (low)? • Is the tree is fully exposed or sheltered by other trees? |
| Winter storm severity (geography and/or elevation: unknown = 2) | Geography and/or elevation issues: if the tree is along the immediate coast or along high ridges near the coast, or above about 5,000 ft. in the Sierra, then storms are more severe than in sheltered valleys or in the central valley. |
| Soil support (whole tree) | <ol style="list-style-type: none"> 2. DETERMINE whether likelihood of failure is related to soil failure rather than a tree failure. <p>This is an evaluation of the soil's ability to hold the tree up and is not applicable if</p> |

Vegetation Management Hazard Tree Rating and Scoring

| Overview for Scoring Likelihood of Failure | |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| | evaluating partial tree failure. |
| Failure Total | The sum of individual element ratings for the tree. |
| Failure Likelihood Level | The sum of the tree elements will fall within a bandwidth that corresponds to a Failure Likelihood rating VL, L, M, H or VH. (Excel files do this automatically.) |
| Failure Matrix Score | <ol style="list-style-type: none"> 1. TRANSLATE the Failure Likelihood (VL, L, M, H, VH) from the Failure Likelihood line into a Matrix score (0, 1, 2, 3, or 4). (Excel files do this automatically.) |
| Tree Matrix Score | <ol style="list-style-type: none"> 1. CREATE a combined Tree rating by adding the strike and failure likelihood numbers. 2. ENTER that number in the corresponding box. (Excel files do this automatically.) |

Vegetation Management Hazard Tree Rating and Scoring

Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability

Page 1 of TYPE total page count for this appendix

1. READ the "Overview for Scoring Impacts: Safety, Fire, and Reliability " in the table below,

THEN RETURN to Section 3. Calculate Impacts in Third Section of HTRS Spreadsheet to perform the steps. **Do not** take action on the instructions in the table below.

| Overview for Scoring Impacts: Safety, Fire, and Reliability | |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Roads (below conductor) | Onto what type of road will conductors fall if a tree/limb collapses? Will roads be blocked so that access for emergency crews or evacuations is affected? |
| Structures (below conductor) | 1. EVALUATE the presence of property improvements. |
| Population density (general vicinity) | 1. REVIEW whether the location occurs within a rural (low), sub-urban (moderate), or an urban (high) area. |
| Emergency response time (in minutes) | 1. CONSIDER response times by fire department, law enforcement, and PG&E. <ul style="list-style-type: none"> Less than 30 minutes as short (1). Less than 45 minutes as moderate (3). More than 45 minutes as long (9). |
| Summer temp (unknown = 3) | 1. CONSIDER local, average temperatures. Low: Areas with summer temperatures about 75 - 80°. Moderate: Areas with summer temperature about 80 - 90°. High: Areas with summer temperatures in the 90 - 110°+ range. |
| Summer and fall winds (unknown = 3) | 1. CONSIDER winds of at least 10 mph. Infrequent means less than once a week. 2. CHOOSE annual fall winds (Chinook, Santa Ana) only in areas where these winds occur regularly , as opposed to occasionally. |
| Slope (general vicinity) | 1. DO NOT CONSIDER only the immediate location of the tree; also EVALUATE where the lines are likely to contact fuel if the tree should fail. 2. MEASURE slope in percentage (%), perpendicular to the contour. |
| Development & land use (general vicinity) | Industrial areas have less vegetation fuel, and might have more security or fire suppression. More weight is allocated toward commercial use of open lands and to housing. Non-residential development includes schools, shopping centers, warehouses, libraries, business centers, etc. High density means condominiums or multiple story apartments. Medium density means greater than 1/10 acre lot. Low density means lots that are greater than 1 acre. |

Vegetation Management Hazard Tree Rating and Scoring

| Overview for Scoring Impacts: Safety, Fire, and Reliability | |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Fuel type (general vicinity) | What is the pre-dominant vegetation type of the area? Irrigated/landscaped areas will likely be in an urban or developed area; other fuel types are likely to be in open space areas. |
| Fuel continuity (general vicinity) | Anything that can burn should be considered fuel. Open fuel refers to low-lying grasses. Patchy fuel is a combination of fuel types, without continuity, as indicated by a significant break like a road, driveway, lawn etc. Horizontal fuels are contiguous along or near the ground. Vertical fuels (fuel ladder) are contiguous vertically. Both a horizontal and vertical fuel ladder might be present. 1. CONSIDER whether the tree canopy is contiguous as well. |
| Fuel moisture content (summer) | Where is the location in relation to the coast? Is the location irrigated and how frequently? Are fuels large (retain moisture) or small (dry quickly) in size? Is the site subject to wind drying? |
| Time of year species likely to fail (unknown = 7) | What time of year is the species likely to fail, or is it equally likely to fail during winter and summer? Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| PG&E assets | If the tree fails, what will happen to PG&E assets such as poles, cross arms, equipment excluding transformers, and fuses? |
| Line | What type of line will be affected if the tree fails? |
| No. of customers | How many customers would be impacted if a failure interrupted service? |
| Impacts Total | Sum of individual element ratings for impacts. |
| Impacts Level | The total of the impacts elements will fall within a bandwidth that corresponds to an Impacts rating of VL, L, M, H or VH. (Excel files do this automatically.) |
| Impacts Matrix Score | 1. TRANSLATE the Impacts rating (VL, L, M, H, VH) into an Impacts Matrix score (0, 1, 2, 3, or 4). (Excel files do this automatically.) |

Vegetation Management Hazard Tree Rating and Scoring

Appendix D, Recommended Species-Specific Ratings

Page 1 of 1

| Species | Species Failure Potential (recommended HTRS ratings) | Whole or Partial Failure Most Likely? (recommended HTRS ratings) | Time of Year Species Likely to Fail (recommended HTRS ratings) |
|------------------|------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------|
| Coast Redwood | Very High (11) | Partial (5) | Nov-March (3) |
| Douglas Fir | Very High (11) | Equally Likely (10) | Nov-March (3) |
| Black Oak | Very High (11) | Equally Likely (10) | Species equally likely to fail in winter as summer (15) |
| Tan Oak | Very High (11) | Whole Tree (7) | Nov-June (8) |
| Monterey Pine | High (7) | Equally Likely (10) | Nov-March (3) |
| Ponderosa Pine | Very High (11) | Whole Tree (7) | Nov-March (3) |
| Valley Oak | Very High (11) | Equally Likely (10) | July-Oct (18) |
| Live Oak | High (7) | Equally Likely (10) | Nov-June (8) |
| Gray Pine | Very High (11) | Equally Likely (10) | July-Oct (18) |
| Blue Gum | Very High (11) | Partial (5) | Species equally likely to fail in winter as summer (15) |
| Calif. Bay | Mod (3) | Whole Tree (7) | Nov-June (8) |
| Coast Live Oak | High (7) | Equally Likely (10) | Nov-June (8) |
| Madrone | Mod (3) | Whole Tree (7) | Nov-June (8) |
| Incense Cedar | High (7) | Whole Tree (7) | Nov-March (3) |
| Cottonwood | Mod (3) | Partial (5) | Species equally likely to fail in winter as summer (15) |
| Monterey Cypress | High (7) | Partial (5) | Nov-June (8) |
| Deodar Cedar | Mod (3) | Partial (5) | Species equally likely to fail in winter as summer (15) |
| Bishop Pine | Mod (3) | Whole Tree (7) | Nov-June (8) |
| Alder - Red | Low (1) | Whole Tree (7) | Nov-June (8) |
| Liquidambar | Low (1) | Partial (5) | Species equally likely to fail in winter as summer (15) |
| Sycamore | Low (1) | Partial (5) | July-Oct (18) |

EXHIBIT H-24-2

Vegetation Management Hazard Tree Rating and Scoring Procedure

SUMMARY

This procedure describes how to use the Hazard Tree Rating System (HTRS) and Scoring Matrix spreadsheet to evaluate the condition of a whole tree or portion of a tree that has the potential to impact PG&E facilities if it fails and strikes them. The HTRS and Scoring Matrix help vegetation managers prioritize work, examine budget impacts, abate trees, and assess abatement decisions. The HTRS and Scoring Matrix assist personnel in making decisions about whether to work specific trees and in what priority.

This procedure also provides guidance for PG&E employees and contractors to meet or exceed the requirements of North American Electric Reliability Corporation (NERC) Standards for Vegetation Management, NERC FAC-003-4 Transmission Vegetation Management.

Level of Use: Informational Use

TARGET AUDIENCE

Vegetation management (VM) operations

VM pre-inspection (PI), tree crew (TC), and quality management contractors

SAFETY

NA

BEFORE YOU START

1. ESTABLISH an understanding on how to use Excel spreadsheets or manual mathematical calculations.
2. ESTABLISH an understanding of the following VM utility standards and procedures:
 - [Utility Standard TD-7102S, "Distribution Vegetation Management Standard"](#)
 - [Utility Procedure TD-7102P-01, "Vegetation Management Distribution Routine Patrol Procedure"](#)
 - [Utility Standard TD-7103S, "Transmission Vegetation Management Standard"](#)
 - [Utility Procedure TD-7103P-01, "Vegetation Management Transmission Routine Non-Orchard Patrol Procedure"](#)

Vegetation Management Hazard Tree Rating and Scoring Procedure

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| 2 Calculate Failure Likelihood in Second Section of HTRS Spreadsheet..... | 7 |
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PROCEDURE STEPS

Overview of Evaluation Process

Each HTRS spreadsheet can be used to record the results of up to three assessments, where an assessment is an evaluation of a whole tree, a part of a tree, or both.

There are three components to using the HTRS and Scoring Matrix tool:

- Determine whether the tree or tree part is likely to strike a facility.
- Determine whether the tree or tree part is likely to fail.
- Determine what impacts could occur if the tree or tree part fails and/or strikes a facility.

This is accomplished by doing the following:

1. Rating the Likelihood for Strike and Likelihood of Failure.
2. Adding the resultant Likelihood of Strike and Likelihood of Failure Scores into a single Tree Matrix Score within the HTRS.
The Impacts rating is directly derived from these combined scores.
3. Plotting the Tree and Impacts scores in the Scoring Matrix.



Vegetation Management Hazard Tree Rating and Scoring Procedure

The Procedure Steps are divided into the following sections:

- **Section 1 for Strike Likelihood:** Determine whether a tree or part of a tree has the potential to make contact with electrical facilities by using the first section of the HTRS spreadsheet.
- **Section 2 for Failure Likelihood:** Determine the condition of a tree or part of a tree and evaluate the surrounding environment by using the second section of the HTRS spreadsheet.
- **Section 3 for Impacts:** Determine the impacts that could occur if a tree or part of a tree makes contact with electrical facilities by using the third section of the HTRS spreadsheet.
- **Section 4 for Plotting Matrix Scores:** Plot Tree Matrix Scores and Impacts Matrix Scores on the Scoring Matrix

All steps in the Procedure Steps section must be performed to obtain an accurate HTRS evaluation.

1 Calculate Strike Likelihood in First Section of HTRS Spreadsheet

- 1.1 Review Appendix A, Overview for Scoring Likelihood of Strike, AND then RETURN to this section to perform the steps below.
- 1.2 **OPEN Utility Form TD-7102P-07-F01, "Vegetation Management Hazard Tree Rating and Scoring Form".** The form can be used in electronic or print format.
- 1.3 READ the instruction at the top of the spreadsheet, which states:

"Decide if the assessment will evaluate a tree or part of a tree that has the potential to make contact with electrical facilities.

More than one assessment can be completed on a single tree."

| Decide if the assessment will evaluate a tree or part of a tree that has the potential to make contact with electrical facilities. More than one assessment can be completed on a single tree. | | | | | | | | Assessment | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------|------------|------|---|
| ELEMENT | CONDITION (RATING IN BLUE) | | | | | | | A | B | C |
| | STRIKE LIKELIHOOD | | | | | | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) | Distance ≤ 75% of tree height (2) | Distance ≤ 50% of tree height (3) | Distance ≤ 25% of tree height (4) | | | |
| Path (part most likely to fail) | | | | No path to facility (0) | Possible path or domino to facility (1) | Likely path or domino to facility (2) | | | | |
| Lean (part most likely to fail) | Severe away from facility (-7) | Mod away from facility (-5) | Slight away from facility (-3) | Vertical or slight to facility (3) | Mod to facility (5) | Severe to facility (7) | | | | |
| Weight (part most likely to fail) | Severe away from line (-5) | Mod away from line (-3) | Slight away from line (-1) | Neutral or slight line side (1) | Mod line side (3) | Severe line side (5) | | | | |
| | | | | | STRIKE TOTAL | 0 | 0 | 0 | | |
| <1=None; STOP | 1-4= Very Low (VL) | 5-6= Low (L) | 7-11= Mod (M) | 12-16= High (H) | >16 Very High (VH) | Strike Likelihood Level | STOP | STOP | STOP | |
| Very Low= 0 | Low=0 | Mod=1 | High=2 | Very High=3 | | Strike Matrix Score | 0 | 0 | 0 | |

Vegetation Management Hazard Tree Rating and Scoring Procedure

NOTE

When using an electronic version of the HTRS spreadsheet, Excel automatically calculates totals and levels, and displays the results in the rows at the bottom of each section.

When using a printed version of the HTRS spreadsheet, it is necessary to manually compute and write the assessment values, totals, and levels on the paper spreadsheet.

1.4 The first section of the spreadsheet lists the Elements to be evaluated for strike likelihood, with conditions that could apply and the number of points assigned to each condition.

| Decide if the assessment will evaluate a tree or part of a tree that has the potential to strike a facility. More than one assessment can be completed. | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|-----------------------------|-----------------------------------|
| ELEMENT | CONDITION (RATING IN BLUE) | | | |
| STRIKE LIKELIHOOD | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) |
| Path (part most likely to fail) | | | | |
| Lean (part most likely to fail) | | Severe away from facility (-7) | Mod away from facility (-5) | Slight away from facility (-3) |
| Weight (part most likely to fail) | | Severe away from line (-5) | Mod away from line (-3) | Slight away from line (-1) |

1.5 For each of the four Elements in the left-hand column, DETERMINE the applicable condition(s).

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

| ELEMENT | CONDITION (RATING IN BLUE) | | | | | | |
|----------------------------------------------------------------------------------|--------------------------------|------------------------------------|----------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| STRIKE LIKELIHOOD | | | | | | | |
| Total height & distance to the conductor of the part that is most likely to fail | Tree height < conductor (STOP) | Distance > than tree height (STOP) | Distance = Tree Height (0) | Distance ≤ 90% of tree height (1) | Distance ≤ 75% of tree height (3) | Distance ≤ 50% of tree height (5) | Distance ≤ 25% of tree height (7) |

Vegetation Management Hazard Tree Rating and Scoring Procedure

1.5 (continued)

The columns A, B, and C are used to rate the assessment.

For example, if the condition "Distance \leq 25% of tree height" applies to the "Total height & distance..." element, enter or write a 7 in column A.

| | Assessment | | |
|----------------------------------------|------------|---|---|
| | A | B | C |
| Distance \leq 25% of tree height (7) | 7 | | |

1.6 RATE the whole tree, part of tree, or both that, might strike by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

1.7 For printed version of HTRS spreadsheet:

1. ADD the numbers in a rating column (A or B or C) AND WRITE the sum in the appropriate STRIKE TOTAL column on the spreadsheet. Repeat for each rating column.

| | Assessment | | |
|----------------------------------------|------------|----------|----------|
| | A | B | C |
| Distance \leq 25% of tree height (7) | 7 | | |
| Likely path or domino to facility (3) | 3 | | |
| Severe to facility (5) | 5 | | |
| Severe line side (5) | 3 | | |
| STRIKE TOTAL | 18 | 0 | 0 |

Vegetation Management Hazard Tree Rating and Scoring Procedure

1.7 (continued)

2. Based on the Strike Total, WRITE the HTRS Likelihood of Strike rating recommendation for the tree in the appropriate rating column (A or B or C).
 - a. For a Strike Total of zero (0), WRITE "STOP."

For example, if the Strike Total for a tree is 18, its Strike Likelihood Level is greater than 16, so equal to VH for Very High.

| | | STRIKE TOTAL | 18 | 0 | 0 |
|-----------------|--------------------|-------------------------|----|------|------|
| | | Strike Likelihood Level | VH | STOP | STOP |
| 12-16= High (H) | >16 Very High (VH) | | | | |

3. WRITE the letter(s) for the Strike Likelihood Level under the appropriate rating column (A or B or C).
4. WRITE the number for the matching Strike Matrix Score in the gray cell under the appropriate rating column (A or B or C).

For example, the Strike Matrix Score for Very High equals 3.

| | | STRIKE TOTAL | 18 | 0 | 0 |
|-----------------|--------------------|-------------------------|----|------|------|
| | | Strike Likelihood Level | VH | STOP | STOP |
| 12-16= High (H) | >16 Very High (VH) | | | | |
| Very High=3 | | Strike Matrix Score | 3 | 0 | 0 |

1.8 LOOK at the Strike Total for each rating column.

1. IF the Strike Total is less than 1,

THEN the whole tree, part of tree, or both is **not** likely to strike facilities; EXIT this procedure;

OTHERWISE continue to the Section below.

Vegetation Management Hazard Tree Rating and Scoring Procedure

2 Calculate Failure Likelihood in Second Section of HTRS Spreadsheet

The second section of the spreadsheet lists the Elements to be evaluated for failure likelihood, with conditions that could apply and the number of points assigned to each condition.

| FAILURE LIKELIHOOD | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|------------------------------------|----------------------------|----------------------------|
| Tree species, age, condition (health, vigor, insect/disease & pests, fire, and mechanical injury, deformity, decay, etc.) & environmental influences | | | | | |
| Tree age (whole tree) | Immature (1) | Mature (3) | Over Mature (7) | Dead (20) | |
| Disease (whole or part most likely to fail) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Oldest defects present for what % of trees life? | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) |

- 2.1 Review Appendix B, Overview for Scoring Likelihood of Failure, AND then RETURN to this section to perform the steps below.
- 2.2 Refer to Appendix D, Recommended Species-Specific Ratings for the ratings (bandwidths) to use for the following two Elements:
 - Species Failure
 - Whole or Partial Failure
 1. IF the tree species for the Species Failure or Whole or Partial Failure Element is listed in Appendix D, Recommended Species-Specific Ratings,

THEN use the condition rating from Appendix D, Recommended Species-Specific Ratings;

OTHERWISE, use the condition rating stated in the HTRS spreadsheet.

| | | | | | | | | | |
|-----------------------------------------|--------------|-------------|----------------|--------------------|---------------|-------------|---|--|--|
| Species failure potential (unknown = 3) | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) | Unknown (3) | 1 | | |
| Whole or partial failure most likely? | | Partial (5) | Whole tree (7) | Equally Likely (9) | Unknown (3) | 5 | | | |

- 2.3 For each of the 15 Elements in the left-hand column, DETERMINE the applicable condition(s).

| FAILURE LIKELIHOOD | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|------------------------------------|----------------------------|----------------------------|
| Tree species, age, condition (health, vigor, insect/disease & pests, fire, and mechanical injury, deformity, decay, etc.) & environmental influences | | | | | |
| Tree age (whole tree) | Immature (1) | Mature (3) | Over Mature (7) | Dead (20) | |
| Disease (whole or part most likely to fail) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) |
| Oldest defects present for what % of trees life? | Very Low (0) | Low (1) | Moderate (3) | High (5) | Very High (7) |

Vegetation Management Hazard Tree Rating and Scoring Procedure

2.3 (continued)

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

2.4 RATE the tree or part of the tree that might fail by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

For example, if the condition "Pathogen—does not cause defect (3)" applies to the Element "Insects (whole tree)", enter or write a **3** in column A for that element.

| | | | | | | |
|----------------------|----------|-------------------------------------|------------------------------------|----------------------------|----------------------------|---|
| Insects (whole tree) | None (0) | Nuisance-does not cause defects (3) | Pathogen-does not cause defect (3) | Nuisance-Causes defect (5) | Pathogen-Causes defect (5) | 3 |
|----------------------|----------|-------------------------------------|------------------------------------|----------------------------|----------------------------|---|

2.5 For printed version of HTRS spreadsheet:

1. ADD the numbers in rating column A, AND WRITE the sum in the appropriate FAILURE TOTAL box on the spreadsheet. Repeat for rating columns B and C.

| | | | |
|---------------|----|---|---|
| FAILURE TOTAL | 31 | 0 | 0 |
|---------------|----|---|---|

2. Follow the HTRS Likelihood of Failure rating recommendation for the tree, based on the Failure Total.

a. WRITE the letter for the Failure Likelihood Level and the number for the Failure Matrix Score in the appropriate boxes under the appropriate rating column (A or B or C).

For example, if the Failure Total for a tree is 31,

| | | | | |
|-------------------|----------------|---------------|-----------------|---------------------|
| <24=Very Low (VL) | 24-37= Low (L) | 38-55=Mod (M) | 56-82= High (H) | >82= Very High (VH) |
| Very Low= 0 | Low=1 | Mod=2 | High=3 | Very High=4 |

Then its Failure Likelihood Level is L for Low, and its Failure Matrix Score is 1 for Low.

| | | | |
|--------------------------|----|----|----|
| FAILURE TOTAL | 31 | 0 | 0 |
| Failure Likelihood Level | L | VL | VL |
| Failure Matrix Score | 1 | 0 | 0 |

3. ADD the resultant Strike Matrix Score (see Section 1, above) **and** the Failure Matrix Score into a single Tree Matrix Score AND WRITE the sum in the appropriate gray box.

Vegetation Management Hazard Tree Rating and Scoring Procedure

2.5 (continued)

For example, add the Strike Matrix Score of 3 to the Failure Matrix Score of 1 to obtain the Matrix Tree Score of 4.

| | | | |
|--------------------------|----|----|----|
| FAILURE TOTAL | 31 | 0 | 0 |
| Failure Likelihood Level | L | VL | VL |
| Failure Matrix Score | 1 | 0 | 0 |
| Tree Matrix Score | 4 | 0 | 0 |

3 Calculate Impacts in Third Section of HTRS Spreadsheet

The third section of the spreadsheet lists the Elements to be evaluated for impacts, with conditions that could apply and the number of points assigned to each condition.

| IMPACTS | | | | | | | | |
|---------------------------------------|------------------------------|------------------------|-----------------------|-------------------------|--------------------|-----------------------------|----------------|--|
| Roads (below conductor) | None or local low volume [0] | Residential street [1] | Local high volume [3] | Dead end or blocked [4] | 2 lane highway [4] | 4 lane highway [5] | Interstate [6] | |
| Structures (below conductor) | | None [0] | Fence or shed [1] | Garage [3] | House [5] | Care facility or school [7] | | |
| Population density (general vicinity) | | | | Low [1] | Moderate [3] | High [5] | | |
| Emergency response time (in minutes) | | | | <30 = Short [1] | <45 = moderate [5] | >45 min=Long [7] | | |

- 3.1 Review Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability, AND then RETURN to this section to perform the steps below.
- 3.2 Refer to Appendix D, Recommended Species-Specific Ratings for the ratings (bandwidths) to use for the following Element:
 - Time of Year Species Likely to Fail
 1. IF the tree species for the Time of Year Species Likely to Fail is listed in Appendix D, Recommended Species-Specific Ratings,

THEN use the condition rating from Appendix D, Recommended Species-Specific Ratings;

OTHERWISE, use the condition rating stated in the HTRS spreadsheet.

| | | | | | | | |
|-------------------------------------|---------------|--------------|---------------|--------------------------------|-------------|--|--|
| Time of year species likely to fail | Nov-March [1] | Nov-June [5] | July-Oct [11] | Equally in winter & summer [7] | Unknown [7] | | |
|-------------------------------------|---------------|--------------|---------------|--------------------------------|-------------|--|--|

Vegetation Management Hazard Tree Rating and Scoring Procedure

3.3 For each of the 15 Elements in the left-hand column, DETERMINE the applicable condition(s).

| IMPACTS | | | | | | | |
|---------------------------------------|------------------------------|------------------------|-----------------------|-------------------------|--------------------|--------------------|-----------------------------|
| Roads (below conductor) | None or local low volume (0) | Residential street (1) | Local high volume (3) | Dead end or blocked (4) | 2 lane highway (4) | 4 lane highway (5) | Interstate (6) |
| Structures (below conductor) | None (0) | | | Fence or shed (1) | Garage (3) | House (5) | Care facility or school (7) |
| Population density (general vicinity) | | | | | Low (1) | Moderate (3) | High (5) |
| Emergency response time (in minutes) | | | | | <30 = Short (1) | <45 = moderate (5) | >45 min = Long (7) |

The **blue** numbers in parenthesis (#) show the number of points assigned to each condition.

3.4 RATE the type of impacts that might occur due to whole tree or partial tree failure by entering or writing one assessment per rating column (A, B, C), using only the **whole numbers** in parenthesis (#) provided in the spreadsheet.

For example, if the condition "Care facility or school (7)" applies to the "Structures (below conductor)" element, enter or write a 7 in column A for that element.

| | | | | | | |
|------------------------------|----------|-------------------|------------|-----------|-----------------------------|---|
| Structures (below conductor) | None (0) | Fence or shed (1) | Garage (3) | House (5) | Care facility or school (7) | 7 |
|------------------------------|----------|-------------------|------------|-----------|-----------------------------|---|

3.5 For printed version of the spreadsheet:

1. ADD the numbers in rating column A AND WRITE the sum in the appropriate Impacts Total box on the spreadsheet. Repeat for rating columns B and C.

| IMPACTS TOTAL | 63 | 0 | 0 |
|---------------|----|---|---|
|---------------|----|---|---|

2. Follow the HTRS Impacts rating recommendation for the tree, based on the Impacts Total.

For example, if the Impacts Total for a tree is 63, its Impacts Matrix Level is H for High.

| IMPACTS TOTAL | 63 | 0 | 0 |
|-----------------------------------|----|---------------|---------|
| 50-66 High (H) >66 Very High (VH) | | Impacts Level | H VL VL |

3. WRITE the Impacts Level in the cell under the appropriate rating column (A or B or C).

For example, an Impacts Level of Very High (VH) equals an Impacts Matrix Score of 4.

| IMPACTS TOTAL | 63 | 0 | 0 |
|-----------------------------------|----|----------------------|---------|
| 50-66 High (H) >66 Very High (VH) | | Impacts Level | H VL VL |
| High=3 Very High=4 | | Impacts Matrix Score | 3 0 0 |

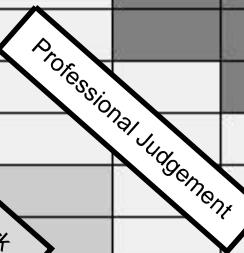
Vegetation Management Hazard Tree Rating and Scoring Procedure

4 Plot Tree and Impacts Matrix Scores on Scoring Matrix

PG&E recommends that trees scoring in the:

- Dark-grey shaded cells should be abated.
- Light-grey shaded cells might not require abatement.
- Un-shaded cells may be abated, if prudent, based on professional judgement.

| Tree Score | 7 (Very High) | | | | | |
|------------|---------------|---------|---------|----------|---------------|--|
| | 6 (High) | | | | | |
| | 5 (High) | | | | | |
| | 4 (Mod) | | | | | |
| | 3 (Mod) | | | | | |
| | 1, 2 (Low) | | | | | |
| | 0 (Very Low) | | | | | |
| | 0 (Very Low) | 1 (Low) | 2 (Mod) | 3 (High) | 4 (Very High) | |
| | Impact Score | | | | | |

4.1 VIEW the Scoring Matrix by clicking on the **Scoring Matrix** tab at the bottom of the HTRS spreadsheet.

1. PLOT the Tree Matrix Score and the Impacts Matrix Score for each tree on the Scoring Matrix by writing an "xx" in the box where these two values intersect.

For example, if the Tree Score is 4 for Moderate, and the Impact Score is 3 for High, write "XX" as shown below.

| Tree Score | 7 (Very High) | | | | | |
|------------|---------------|---------|---------|----------|---------------|--|
| | 6 (High) | | | | | |
| | 5 (High) | | | | | |
| | 4 (Mod) | | | | | |
| | 3 (Mod) | | | | | |
| | 1, 2 (Low) | | | | | |
| | 0 (Very Low) | | | | | |
| | 0 (Very Low) | 1 (Low) | 2 (Mod) | 3 (High) | 4 (Very High) | |
| | Impact Score | | | | | |



END of Instructions

Vegetation Management Hazard Tree Rating and Scoring Procedure

DEFINITIONS

Hazard Tree Rating System (HTRS): A spreadsheet designed to be used as a decision making tool for computing the Tree Score and Impact values for entering into the Scoring Matrix.

IMPLEMENTATION RESPONSIBILITIES

The Document Owner is responsible for the implementation, communication, and maintenance of this procedure. The Document Owner issues training and compliance materials annually.

VM contractors are responsible for training all employees before they perform PG&E VM work and for providing documentation of this training.

All PG&E VPMs and VM contractors are responsible for knowing and complying with this procedure.

GOVERNING DOCUMENT

[Utility Standard TD-7102S, "Distribution Vegetation Management Standard"](#)

[Utility Standard TD-7103S, "Transmission Vegetation Management Standard"](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

ANSI Standard, NCA 300, Part 7

[CPUC General Order 95, Rule 35](#)

Federal Energy Regulatory Commission (FERC) Order No. 777

[Public Resource Code \(PRC\) 4292](#)

[Public Resource Code \(PRC\) 4293](#)

North American Electric Reliability Council (NERC) Standards for Vegetation Management, FAC-003-04

REFERENCE DOCUMENTS

Developmental References:

NA



Vegetation Management Hazard Tree Rating and Scoring Procedure

Supplemental References:

[Utility Procedure TD-7102P-01, "Vegetation Management Distribution Routine Patrol Procedure"](#)

[Utility Form TD-7102P-07-F01, "Vegetation Management Hazard Tree Rating and Scoring Form"](#)

[Utility Procedure TD-7103P-01, "Vegetation Management Transmission Routine Non-Orchard Patrol Procedure"](#)

APPENDICES

Appendix A, Overview for Scoring Likelihood of Strike

Appendix B, Overview for Scoring Likelihood of Failure

Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability

Appendix D, Recommended Species-Specific Ratings

ATTACHMENTS

[Utility Form TD-7102P-07-F01, "Vegetation Management Hazard Tree Rating and Scoring Form"](#)

DOCUMENT REVISION

TD-7102P-07, "Vegetation Management Hazard Tree Rating and Scoring," Rev. 2, 11/28/2017

DOCUMENT APPROVER

[REDACTED], Senior Manager, Vegetation Management

DOCUMENT OWNER

[REDACTED], Senior Vegetation Program Manager

DOCUMENT CONTACT

[REDACTED], Senior Vegetation Program Manager

[REDACTED], Supervising Vegetation Program Manager

Vegetation Management Hazard Tree Rating and Scoring Procedure

REVISION NOTES

| Where? | What Changed? |
|----------------------------|-----------------------------------------------------------------------------------------------------------|
| Target Audience | Removed “governance & support operations”, changed “quality control” to “quality management” contractors. |
| Safety | Removed boilerplate language to review best management practices. |
| Before You Start | Clarified. |
| Section 4 | Clarified bullet points specific to tree scoring and the color reference in the matrix. |
| Throughout | Updated document titles and links |
| Document Owner and Contact | Updated. |
| Appendix D | Recommendations changed for more than half of the ratings. Table reformatted. |
| TD-7102P-01-F01 | Updated auto-calculations, clarified legend for matrix, corrected duplicate “Low” score in Line 26. |

Vegetation Management Hazard Tree Rating and Scoring Procedure

Appendix A, Overview for Scoring Likelihood of Strike

Page 1 of 1

1. READ the "Overview for Scoring Likelihood of Strike" in the table below,

THEN RETURN to Section 1. Calculate Strike Likelihood in First Section of HTRS Spreadsheet to perform the steps. Do **not** take action on the instructions in the table below.

| Overview for Scoring Likelihood of Strike | |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Total height & distance to the conductor or the part that is most likely to fail | <p>1. WHEN the tree is shorter than the facilities, OR the distance to the conductor is more than the height of the tree or the part most likely to fail, THEN the tree cannot strike; EXIT this procedure.</p> <p>As the distance from the tree to the conductor decreases in relation to the tree's height, the ratings increase.</p> <p>2. INCLUDE slope.</p> <p>3. EVALUATE height and distance from the conductors of that part from where it will "hinge."</p> |
| Path (part most likely to fail) | <p>1. Some trees are tall enough to strike, but are not likely to, because the path is blocked.</p> <p>2. Have conditions changed since the last inspection such that the tree currently has a path to strike?</p> |
| Lean (part most likely to fail) | <p>1. EVALUATE the lean of the main stem(s) or portions of the tree most likely to fail regardless of weight distribution.</p> <p>2. IF a nearly horizontal branch is being evaluated, AND it occurs perpendicularly and directly over the lines, THEN USE the Severe to Facility rating for lean.</p> |
| Weight (part most likely to fail) | <p>1. EVALUATE the weight distribution of the tree or portion most likely to fail regardless of lean.</p> <p>2. IF a nearly horizontal branch is being evaluated AND it occurs perpendicularly and directly over the lines, THEN USE the Severe Line Side rating for weight.</p> |
| Strike Total | The total of the height/distance, path, lean, and weight ratings. |
| Strike Likelihood Level | <p>1. FIND the corresponding bandwidth that the strike total matches.</p> <p>This is the Strike Likelihood rating, signified by letter: VL, L, M, H or VH.</p> |
| Strike Matrix Score | 1. TRANSLATE the rating (VL, L, M, H, VH) from the Strike Likelihood line into a Matrix score (0, 1, 2, 3, or 4). |

Vegetation Management Hazard Tree Rating and Scoring Procedure

Appendix B, Overview for Scoring Likelihood of Failure

Page 1 of 3

1. READ the "Overview for Scoring Likelihood of Failure" in the table below,

THEN RETURN to Section 2. Calculate Failure Likelihood in Second Section of HTRS Spreadsheet to perform the steps. Do **not** take action on the instructions in the table below.

| Overview for Scoring Likelihood of Failure | |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Tree Age (whole tree) | <p>Exact age is not required.</p> <ol style="list-style-type: none"> 1. ESTIMATE age, taking species into consideration. Tree size is only an indicator of age. 2. INCLUDE dead trees in this line item. 3. Evaluate age regardless of condition. Distinguish DEAD from DEFECTIVE (see below). |
| Disease (whole or part most likely to fail) | Some diseases are fatal to a tree; others are nuisances, but when combined with other agents, might be a problem. |
| Insects (whole tree) | Some insects are fatal to a tree; others are nuisances, but when combined with other agents, might be a problem. |
| Oldest defect present for what % of tree's life | <p>A Defect is a reduction of wood strength (structural integrity). Lean is not necessarily a defect. "Dead" is not necessarily a defect.</p> <p>The longer amount of time an agent of decline has to work on a tree, the more effect it can have.</p> <ol style="list-style-type: none"> 1. EVALUATE Defect Severity. |
| Severity caused by combination of defects (≤ 1 defect use 0) | <ol style="list-style-type: none"> 1. IF there appears to be a combination of defect(s) or disease and insects, THEN evaluate the indications of the defect(s), including combined defects, to determine Severity. |
| Defect extent (worst radially in the log) | <ol style="list-style-type: none"> 1. INDICATE the proportion of the log, radially (two dimensionally) affected by defect(s). |
| Defect distribution (worst vertically in the tree) | <p>What proportion of the tree vertically is affected by defect(s)?</p> <p>Is there downward moving rot from an entry point further up the tree?</p> <p>Is the decay uniform along its vertical distribution?</p> |
| Clues from surrounding trees/stand | <p>What types of indications of overall tree or stand health are visible in the surrounding trees?</p> <p>Are others of the same species in similar or worse condition?</p> <p>Have stand conditions changed since the last inspection that exposed the tree to new environmental pressures?</p> |

Vegetation Management Hazard Tree Rating and Scoring Procedure

| Overview for Scoring Likelihood of Failure | |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Tree condition (of whole tree or part most likely to fail) | <ol style="list-style-type: none"> 1. IF a tree is failing when the inspector arrives (Already failing), THEN immediately call for tree crew. 2. EVALUATE the tree's overall condition and circumstances: <ul style="list-style-type: none"> • Vigorous? Well growing? Healthy? • Good taper (height to diameter ratio)? • Does the tree have good color; needle length or leaf shape & size; and internode length, etc.? • Are there wounds, die back, conks, splits, dead limbs, seepage, included bark, swellings, cat-faces, etc.? • Are roots buried or severed? • Are there other adverse environmental influences? • Have there been changes due to adjacent tree work or any other kind of work since the last inspection that would increase a tree's failure likelihood? • Is the tree wind-firm? 3. GIVE a dead tree or dead part of the tree its own category. 4. Evaluate co-dominance in the tree. <ul style="list-style-type: none"> • Is co-dominance in the lower part of the tree (lowest 25% of total height)? • Is co-dominance in the middle part of the tree (up to 75% of total height)? • Is co-dominance in the top part of the tree? • Is there included bark? If yes, how severe? |
| Species failure potential (unknown = 3) | Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| Whole or partial failure most likely? | Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| Tree canopy size or sail (part most likely to fail) | <ol style="list-style-type: none"> 1. EVALUATE the amount of canopy the tree has (sail or wind resistance) relative to the trees surrounding trees. |
| Wind exposure (topography & position in stand) | <ol style="list-style-type: none"> 1. CONSIDER the tree's exposure to wind: <ul style="list-style-type: none"> • Where on the slope is the tree located? On the ridge (high winds), mid slope (moderate winds) or gulch bottom (low)? • Is the tree is fully exposed or sheltered by other trees? |
| Winter storm severity (geography and/or elevation: unknown = 2) | Geography and/or elevation issues: if the tree is along the immediate coast or along high ridges near the coast, or above about 5,000 ft. in the Sierra, then storms are more severe than in sheltered valleys or in the central valley. |
| Soil support (whole tree) | <ol style="list-style-type: none"> 2. DETERMINE whether likelihood of failure is related to soil failure rather than a tree failure. <p>This is an evaluation of the soil's ability to hold the tree up and is not applicable if</p> |

Vegetation Management Hazard Tree Rating and Scoring Procedure

| Overview for Scoring Likelihood of Failure | |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| | evaluating partial tree failure. |
| Failure Total | The sum of individual element ratings for the tree. |
| Failure Likelihood Level | The sum of the tree elements will fall within a bandwidth that corresponds to a Failure Likelihood rating VL, L, M, H or VH. (Excel files do this automatically.) |
| Failure Matrix Score | <ol style="list-style-type: none"> 1. TRANSLATE the Failure Likelihood (VL, L, M, H, VH) from the Failure Likelihood line into a Matrix score (0, 1, 2, 3, or 4). (Excel files do this automatically.) |
| Tree Matrix Score | <ol style="list-style-type: none"> 1. CREATE a combined Tree rating by adding the strike and failure likelihood numbers. 2. ENTER that number in the corresponding box. (Excel files do this automatically.) |

Vegetation Management Hazard Tree Rating and Scoring Procedure

Appendix C, Overview for Scoring Impacts: Safety, Fire, and Reliability

Page 1 of TYPE total page count for this appendix

1. READ the "Overview for Scoring Impacts: Safety, Fire, and Reliability " in the table below,

THEN RETURN to Section 3. Calculate Impacts in Third Section of HTRS Spreadsheet to perform the steps. **Do not** take action on the instructions in the table below.

| Overview for Scoring Impacts: Safety, Fire, and Reliability | |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Roads (below conductor) | Onto what type of road will conductors fall if a tree/limb collapses? Will roads be blocked so that access for emergency crews or evacuations is affected? |
| Structures (below conductor) | 1. EVALUATE the presence of property improvements. |
| Population density (general vicinity) | 1. REVIEW whether the location occurs within a rural (low), sub-urban (moderate), or an urban (high) area. |
| Emergency response time (in minutes) | 1. CONSIDER response times by fire department, law enforcement, and PG&E. <ul style="list-style-type: none"> • Less than 30 minutes as short (1). • Less than 45 minutes as moderate (3). • More than 45 minutes as long (9). |
| Summer temp (unknown = 3) | 1. CONSIDER local, average temperatures. Low: Areas with summer temperatures about 75 - 80°. Moderate: Areas with summer temperature about 80 - 90°. High: Areas with summer temperatures in the 90 - 110°+ range. |
| Summer and fall winds (unknown = 3) | 1. CONSIDER winds of at least 10 mph. Infrequent means less than once a week. 2. CHOOSE annual fall winds (Chinook, Santa Ana) only in areas where these winds occur regularly , as opposed to occasionally. |
| Slope (general vicinity) | 1. DO NOT CONSIDER only the immediate location of the tree; also EVALUATE where the lines are likely to contact fuel if the tree should fail. 2. MEASURE slope in percentage (%), perpendicular to the contour. |
| Development & land use (general vicinity) | Industrial areas have less vegetation fuel, and might have more security or fire suppression. More weight is allocated toward commercial use of open lands and to housing. Non-residential development includes schools, shopping centers, warehouses, libraries, business centers, etc. High density means condominiums or multiple story apartments. Medium density means greater than 1/10 acre lot. Low density means lots that are greater than 1 acre. |

Vegetation Management Hazard Tree Rating and Scoring Procedure

| Overview for Scoring Impacts: Safety, Fire, and Reliability | |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element | Description |
| Fuel type (general vicinity) | What is the pre-dominant vegetation type of the area? Irrigated/landscaped areas will likely be in an urban or developed area; other fuel types are likely to be in open space areas. |
| Fuel continuity (general vicinity) | Anything that can burn should be considered fuel. Open fuel refers to low-lying grasses. Patchy fuel is a combination of fuel types, without continuity, as indicated by a significant break like a road, driveway, lawn etc. Horizontal fuels are contiguous along or near the ground. Vertical fuels (fuel ladder) are contiguous vertically. Both a horizontal and vertical fuel ladder might be present. 1. CONSIDER whether the tree canopy is contiguous as well. |
| Fuel moisture content (summer) | Where is the location in relation to the coast? Is the location irrigated and how frequently? Are fuels large (retain moisture) or small (dry quickly) in size? Is the site subject to wind drying? |
| Time of year species likely to fail (unknown = 7) | What time of year is the species likely to fail, or is it equally likely to fail during winter and summer? Appendix D, Recommended Species-Specific Ratings contains recommended ratings for the top 20 species that cause outages within the PG&E service territory. |
| PG&E assets | If the tree fails, what will happen to PG&E assets such as poles, cross arms, equipment excluding transformers, and fuses? |
| Line | What type of line will be affected if the tree fails? |
| No. of customers | How many customers would be impacted if a failure interrupted service? |
| Impacts Total | Sum of individual element ratings for impacts. |
| Impacts Level | The total of the impacts elements will fall within a bandwidth that corresponds to an Impacts rating of VL, L, M, H or VH. (Excel files do this automatically.) |
| Impacts Matrix Score | 1. TRANSLATE the Impacts rating (VL, L, M, H, VH) into an Impacts Matrix score (0, 1, 2, 3, or 4). (Excel files do this automatically.) |

Vegetation Management Hazard Tree Rating and Scoring Procedure

Appendix D, Recommended Species-Specific Ratings

Page 1 of 1

| Species | Species Failure Potential | Whole or Partial Failure Most Likely? | Time of Year Species Likely to Fail |
|------------------|---------------------------|---------------------------------------|--------------------------------------------------------|
| Coast Redwood | Very High (7) | Partial (5) | Nov-March (1) |
| Douglas Fir | Very High (7) | Equally Likely (9) | Nov-March (1) |
| Black Oak | Very High (7) | Equally Likely (9) | Species equally likely to fail in winter as summer (7) |
| Tan Oak | Very High (7) | Whole Tree (7) | Nov-June (5) |
| Monterey Pine | High (5) | Equally Likely (9) | Nov-March (1) |
| Ponderosa Pine | Very High (7) | Whole Tree (7) | Nov-March (1) |
| Valley Oak | Very High (7) | Equally Likely (9) | July-Oct (18) |
| Live Oak | High (5) | Equally Likely (9) | Nov-June (5) |
| Gray Pine | Very High (7) | Equally Likely (9) | July-Oct (18) |
| Blue Gum | Very High (7) | Partial (5) | Species equally likely to fail in winter as summer (7) |
| Calif. Bay | Mod (3) | Whole Tree (7) | Nov-June (5) |
| Coast Live Oak | High (7) | Equally Likely (9) | Nov-June (5) |
| Madrone | Mod (3) | Whole Tree (7) | Nov-June (5) |
| Incense Cedar | High (5) | Whole Tree (7) | Nov-March (1) |
| Cottonwood | Mod (3) | Partial (5) | Species equally likely to fail in winter as summer (7) |
| Monterey Cypress | High (7) | Partial (5) | Nov-June (5) |
| Deodar Cedar | Mod (3) | Partial (5) | Species equally likely to fail in winter as summer (7) |
| Bishop Pine | Mod (3) | Whole Tree (7) | Nov-June (5) |
| Alder - Red | Low (1) | Whole Tree (7) | Nov-June (5) |
| Liquidambar | Low (1) | Partial (5) | Species equally likely to fail in winter as summer (7) |
| Sycamore | Low (1) | Partial (5) | July-Oct (18) |

EXHIBIT H-25



Vegetation Management Hazard Tree Assessment Tool

SUMMARY

The assessment tool for potentially hazardous strike trees has changed. Effective March 2, 2020 the hazard tree rating and scoring (HTRS) assessment is obsolete and the tree assessment tool (TAT) is the replacement.

Level of Use: Informational Use

AFFECTED DOCUMENT

Utility Procedure TD-7102P-07, "Vegetation Management Hazard Tree Rating and Scoring Procedure," Rev. 3, published 08/14/2019.

TARGET AUDIENCE

All vegetation management employees and personnel involved in the inspection of trees associated with the maintenance of electric facilities.

WHAT YOU NEED TO KNOW

- Utility Procedure TD-7102P-07, "Vegetation Management Hazard Tree Rating and Scoring Procedure" must no longer be used.
- All pre-inspection assessments of potentially hazardous trees must use the TAT.
- The TAT is only available electronically and resides in the ArcGIS Collector and VMPI2 applications.
- All TAT assessments are documented electronically in the tree record.
- While multiple assessments can be performed on a tree, only one TAT result score can be documented within the tree point.

The TAT assists personnel in making decisions about whether to work a tree and in what priority. The tool is designed to evaluate the condition of a whole tree or a portion of a tree that has the potential to impact Pacific Gas and Electric Company (PG&E) conductors in the event the tree fails and strikes the conductors directly or strikes electrical facilities supporting them.

DOCUMENT APPROVER

[REDACTED] Manager, Vegetation Management

DOCUMENT CONTACT

[REDACTED], Senior Vegetation Program Manager, Vegetation Management

[REDACTED], Supervising Vegetation Program Manager, Vegetation Management



Vegetation Management Hazard Tree Assessment Tool

INCLUSION PLAN

This bulletin is strictly informational. Once all applicable guidance documents have been updated to remove reference to the HTRS this bulletin will be archived.